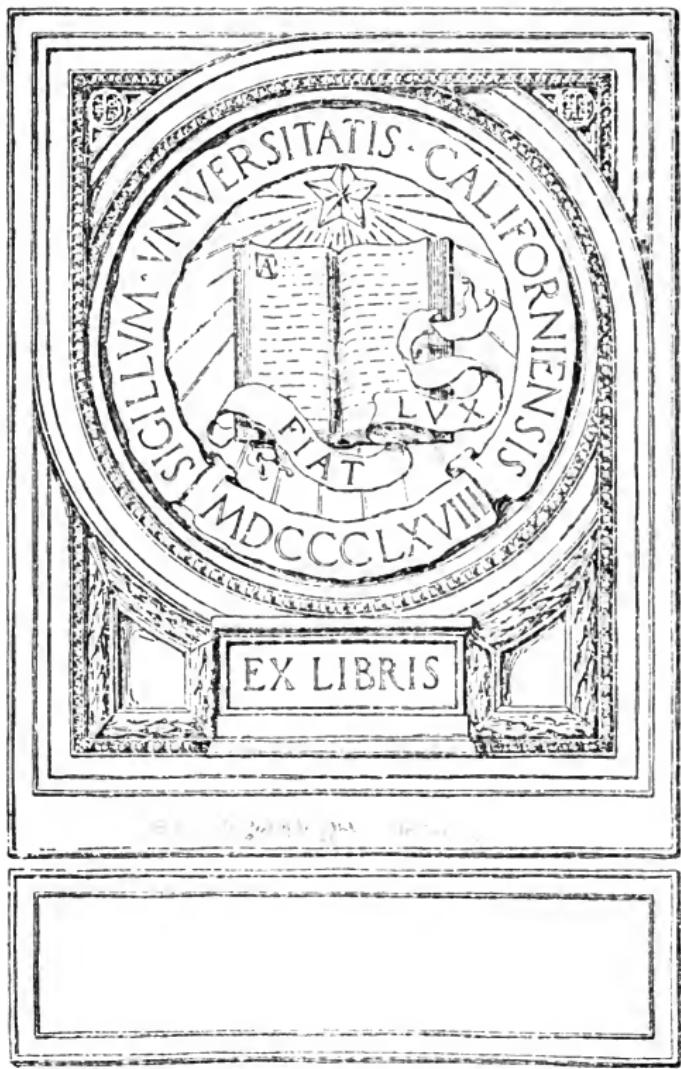


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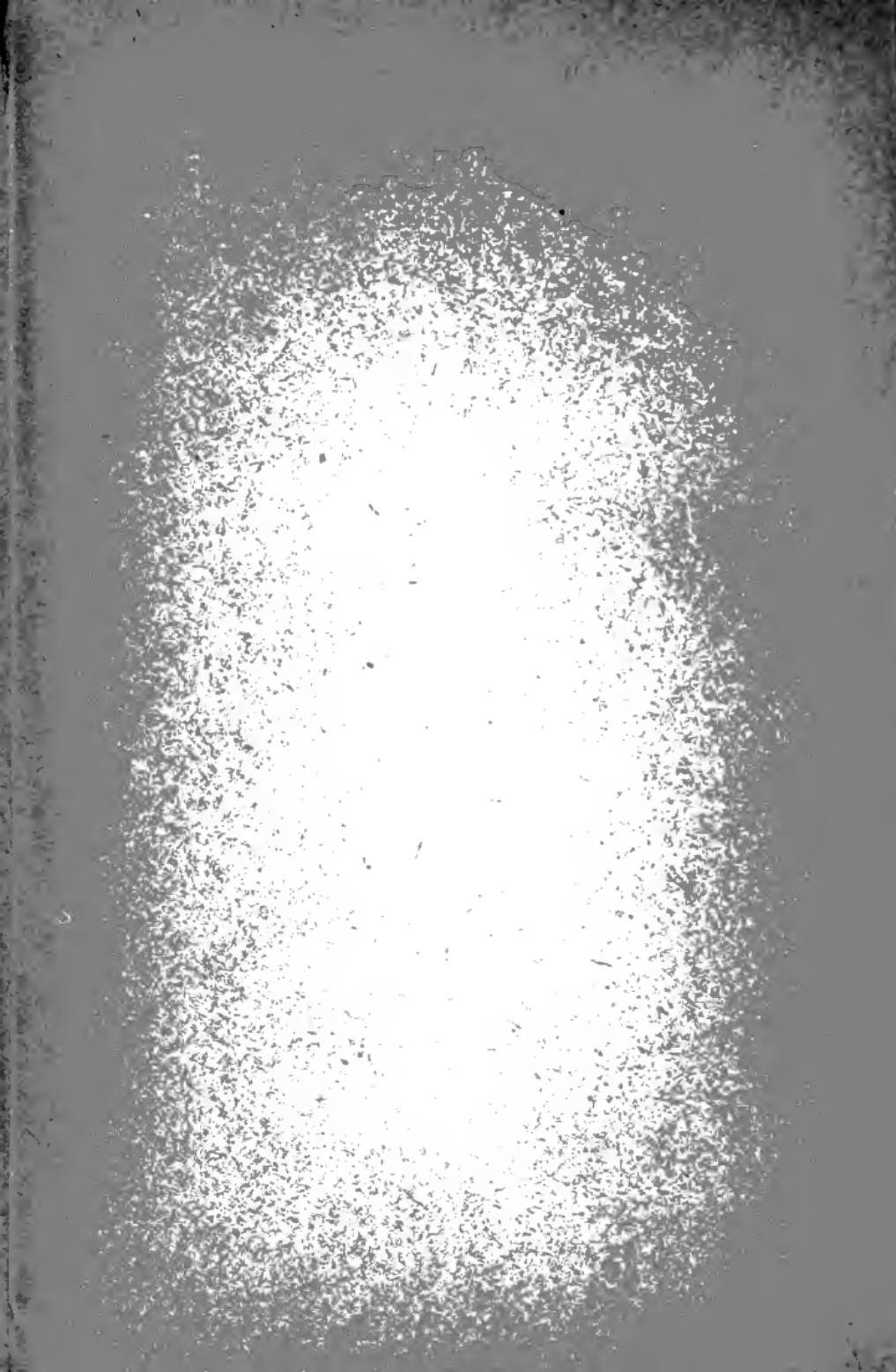


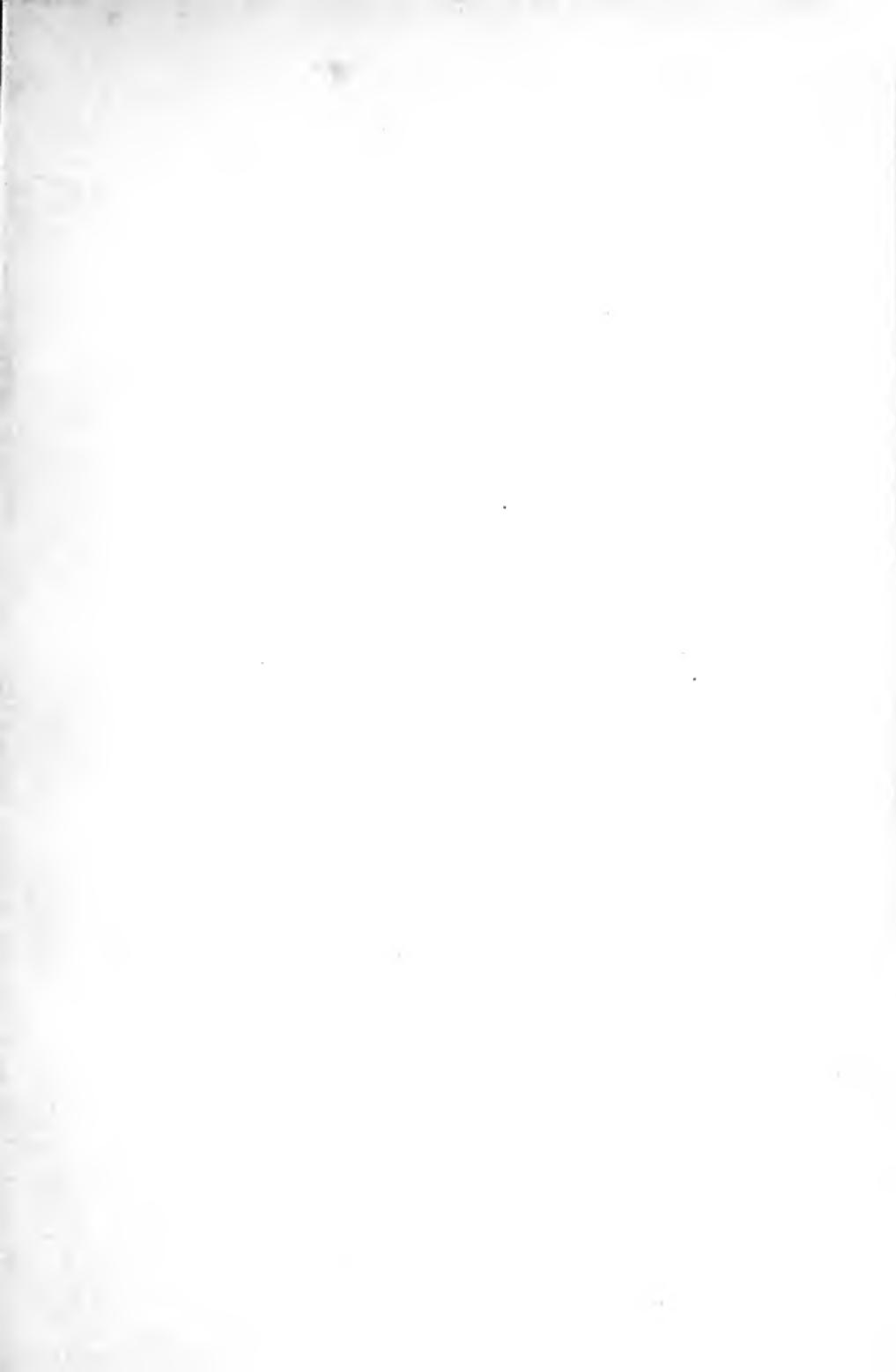
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IMPROVEMENTS
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EXERCISES
FOR THE
IMPROVEMENT OF THE SENSES

FOR YOUNG CHILDREN

BY

HORACE GRANT

AUTHOR OF "ARITHMETIC FOR YOUNG CHILDREN"

AMERICAN EDITION

EDITED BY WILLARD SMALL

BOSTON
LEE AND SHEPARD PUBLISHERS
No. 10 MILK STREET
1887

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IMPROVEMENT OF THE SENSES.

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This book was originally published under the superintendence of the Society for the Diffusion of Useful Knowledge.

The steady demand for this little book from many prominent teachers, superintendents, and others interested in primary instruction, has induced the present publishers to issue it at a lower price, and with such changes as will better fit it for use with American children.

Sent, postpaid, to any address, on receipt of 50 cents.

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EDUCATION DEPT.

ARITHMETIC
FOR
YOUNG CHILDREN
BEING

A Series of Exercises Exemplifying
the Manner in which Arithme-
tic should be Taught to
Young Children

BY HORACE GRANT

AMERICAN EDITION
EDITED BY WILLARD SMALL

BOSTON
LEE AND SHEPARD PUBLISHERS
NO. 10 MILK STREET

SECOND STAGE OF ARITHMETIC

ARITHMETIC
FOR
SCHOOLS AND FAMILIES

BY
HORACE GRANT

IN PREPARATION

BOSTON
LEE AND SHEPARD PUBLISHERS
NO. 10 MILK STREET

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О ЖИВОМ
ДРУЖБЕ

EXERCISES ON FAMILIAR OBJECTS.

INTRODUCTION.

THESE Exercises have been prepared for the purpose of providing instruction and amusement for children who are too young to learn to read and write. Their special object is to excite little children to examine surrounding objects correctly, so that valuable knowledge may be acquired, while the attention, memory, judgment, and invention are duly exercised.

It has been generally adopted as a principle in education, that young children possess scarcely any faculty but memory: and that the memory must be cultivated until the other faculties make their appearance. It is true that children possess less intellectual power than adults; but it is a mistake to suppose that their faculties differ from those of their seniors in any respect but in degree, or that the infantile powers are to be strengthened by neglect. It is better, no doubt, to let the young child take its chance, and teach it nothing, rather than teach it ill; but half an hour's observation of an active child

will convince us that the faculties of a rational being can never be too young for exercise and instruction. The exertion must, however, be suited to the infantile powers. If we insist on confining ourselves to one plan, which is fit only for men, we shall most assuredly fail ; but shall we have any right to blame children, or deny the existence of their faculties, because we ourselves are ignorant and unskilful ?

A great mistake is also made with regard to the memory itself. There are many kinds of memory. One person will display a wonderful recollection of places or of persons, but of nothing else ; another will be equally remarkable for his remembrance of facts ; a third for his recollection of general truths, while particular facts escape him ; and a fourth will remember long trains of words, though he has a bad memory for facts or knowledge ; indeed the ablest men have sometimes had an indifferent memory for words. Now the only memory which our instructors attempt to cultivate is one of the lowest species, namely, verbal memory, which often co-exists with a bad memory for all that is most useful, — with great ignorance, and with feeble powers. It is in committing to memory long trains of words, which are seldom or never understood, and in repeating them by rote, that the hours of instruction are usually spent.

The First Part of this Treatise is composed of Exercises on Familiar Objects, their qualities, parts, structure, and uses.

If these Exercises were put forward as comprising everything that is necessary or practicable in the education of young children, before the commencement of reading and writing, they might be justly characterized as extremely defective. But they include only a small portion of the subjects that may and ought to be rendered available in early education ; and they are not directed to the development of any of the higher faculties and emotions, towards which our unceasing exertions should nevertheless be especially, though cautiously, directed. Desirable as it undoubtedly is, to cultivate the body and intellect to the highest degree, it would be very wrong to do this at the expense of the affections, and of the higher moral feelings. A good education would attend equally to the physical, intellectual, and moral powers, not taking up each in its turn and keeping it far apart, as if it had no relationship with the rest, but striving to discipline them all in close union, so that, like the instruments of a perfect band, they may conduce to one harmonious result. It must, however, be recollected, that, in the rational instruction of young children, much more depends upon the teacher than upon books ; and that books can be of little service without the active and cheerful exertions of the instructor and pupil.

The absence of scientific arrangement in these Exercises has been intentional. The familiar subjects introduced may be arranged in many ways for various purposes. No one science is here pursued ;

therefore any peculiar scientific arrangement has not been deemed admissible. Children are not ripe for arrangement until they have attained some knowledge of that which is to be arranged.

The Exercises have been put in the form of questions, because the teacher will frequently have occasion to make use of that form in leading the pupil to an accurate examination of nature, and because that form will indicate most briefly the course which it will be most frequently found advisable to pursue. It must be remembered, however, that nothing is more irritating to a young child than to be set up as a butt to be questioned at; nor is anything more likely to produce a distaste for accurate observation and persevering thought than a constant volley of interrogations. The poor child who is condemned to find answers to unceasing interrogatories, either grows careless, and says anything that comes into his mind, or employs his faculties in evading the subject, concealing his ignorance in a cloud of words, or in vapid commonplace.

The great aim of the instructor should be to engage his pupil in interesting conversation upon some familiar object, not correcting him when wrong, but leading him (by questions or otherwise), whenever the case will admit, to correct his mistake by renewed observation or more careful thought.

The instructor, moreover, must not insist that the child shall know (or, rather, pretend to know) the whole of a subject. The most successful attempts

of the most promising child must necessarily be feeble and incomplete. An opposite course may form that miserable puppet, an infant prodigy, than which a more painful object cannot be contemplated by a reflecting mind. The infant's progress to knowledge must, to the superficial observer, appear slow, in order that it may in reality be certain and rapid; the faculties, far from being strained or forced, must be cautiously and gently exercised, in order that they may, in due season, be mature and vigorous.

To many questions an imperfect answer is the best that can be given by the most promising child — an imperfect answer *we* should justly call it, though it may be perfect as regards the knowledge and faculties of the child. A better answer would be a certain proof that the child had neither discovered nor known the truth, but merely that he had learnt the words by rote. To some questions the instructor will expect no answer; it is sufficient that the pupil should be thus excited to think, or induced to suspect that something he has taken for granted is not so certain as he had supposed; and the subject may be reverted to at a future time with increased effect. An opportune question will frequently check a hasty assumption, an incorrect observation, or an erroneous train of thought. The question has then served its purpose, and it would be folly to exact a categorical verbal answer. Moreover, when the pupil is deeply engaged in observing

or considering anything, it is very ill-judged to interrupt him by questions or conversation.

Minute accuracy must not be expected from children ; it is the result of maturity only. An approximation, nay, often a clumsy and distant approximation, must suffice. We must endure clearly to see and fully to know many things towards which our children are slowly and feebly crawling ; we must have sufficient strength of mind to check our eagerness and anxiety for their immediate improvement ; we must let nature take her course, slow though it be, content if we can remove the larger obstructions, smooth the greater difficulties,—cautiously offering facilities, and still more cautiously providing excitements.

But there are many things that a child can know accurately. These he should not be permitted to observe carelessly, or study inaccurately. To this end he must examine and think for himself ; for he will do but little if he only learns by heart the words of a book. He cannot know that which he does not understand, by committing to memory any number of words ; and little can he know of feelings he has never felt, how much soever he may learn of their names.

Instruction is usually given independent of external circumstances ; or, if we desire the presence of external circumstances, we create them for the occasion, and call them experiments or proofs. Much knowledge, especially scientific knowledge,

must unavoidably be communicated by words, if it is communicated at all ; we cannot wait for the occurrence of events most likely to make a vivid impression on the particular mind we are instructing ; and possibly such favorable incidents might be waited for in vain. But in exercises such as those which compose this book, the most favorable circumstances may be seized as they arise, and will therefore produce an extraordinary effect. Wherever we are, in a room, garden, field, or road, in the morning or evening, winter or summer, action or rest, something interesting may be extracted ; for, at the moment when the attention is warmly excited, an event may be turned to the best account. The valuable habits acquired by means of familiar objects and petty events may gradually be extended to the most important subjects. Thus, wherever we go, we shall be trained to observe and to reflect, to acquire knowledge and entertainment, and to sympathize with all around us, eschewing all uncharitableness and narrowness of soul.

DIRECTIONS FOR THE TEACHER.

THE teacher should, as far as possible, present objects themselves for the pupil to examine: when objects are not to be had, models, pictures, or specimens, will in some degree supply their place.

The pupil should not be told anything that he can find out with a little examination and consideration; but should discover as much as possible for himself, and endeavor to correct his own mistakes.

The teacher should take great care not to harass the child with questions. An interesting conversation between teacher and pupil on the object under examination is always to be aimed at.

The teacher's utmost exertions should be used to make the exercises agreeable to the pupil, who will then make rapid progress. The greatest caution should be used in the commencement, lest the pupil acquire a distaste, which may not be removed without great delay and difficulty; the exercises should therefore always be treated as an amusement, and never as a task; the dialogue should stop the instant it ceases to please.

At first the exercises should not be allowed to

take up more than a minute or two at a time ; then duration should gradually extend to five minutes, and, as the child advances, to the extent of ten minutes ; some of the oldest children may feel interested as long as a quarter of an hour. It will be sufficient if these exercises are done once a day. Occasionally they may be dropped entirely for a week or ten days ; and, with older pupils, for a month.

These exercises may be performed by a single child, or by several children at once ; but it would be better that the children should not be put into a class until they and the instructor are somewhat accustomed to the plan : it may then be beneficial to have a small class, if the knowledge and capacity of the pupils be not greatly different. It is impossible that these, or any other exercises which require each pupil to be individually attended to, can be performed by a large school in one class. A class should not consist of more than a dozen children, and a much smaller number would be best at first.

There is scarcely an occasion on which exercises of this description may not be introduced, whether in a school, sitting-room, garden, field, road, etc. Favorable circumstances should also be seized whenever they occur, as on such occasions an extraordinary effect may be produced on the mind.

It is not possible to provide every exercise that is required. Comparatively few are here given. The teacher who enters into the spirit of these will have

little difficulty in forming a variety on every kind of familiar objects, which will be more suited to his pupils than any that could be provided for him.

Probably the book will be found most serviceable to teachers if it be used privately to suggest subjects or modes of conversation ; and it should always be kept out of the reach of children when it is likely to call up the idea of a task.

These exercises may be performed with children who are much too young to read and write. Some of them are intended for children three or four years of age ; others are intended for the ages of five, six, or seven.

PART I.

EXERCISES ON FAMILIAR OBJECTS.

SECTION I.

Hands.

OPEN your hands — shut them — touch something — hold something — lift something — clap your hands — close your hands together.

Body.

Which is your head? Touch it.

Which is your face? Touch it.

Which is your nose? Touch it.

Which is your hair? Touch it.

Which is your forehead? Touch it.

Which is your body? Touch it.

Colors.

Do you know what is the color of this card? (For this and other exercises on colors, the teacher should be provided with a few colored cards, or bits of colored worsted, silk or cotton cloth — colored

wafers, loose or stuck on card, may also answer the purpose.)

What is the color of this card? — And this? — And this?

Chair.

What is this? (A chair should be before the pupil.)

What part of the chair is this? (The teacher should point to the different parts.)

What part is this? — And this? etc.

Spoon.

Which part of the spoon should not be held in the hand?

Try and hold that part in your hand, and see if you think you can use the handle instead of the wide part or bowl?

Eating.

Is a table good to eat?

Is a cake good to eat?

Is a chair good to eat?

Is a pie good to eat?

Is a plate good to eat?

Is a spoon good to eat?

Is an apple good to eat?

Number.

How many legs has this chair?

How many sides has this chair?

How many backs has this chair?

How many seats has this chair?

Color.

Of what color is the back of this chair?

Of what color is the seat of this chair?

Of what color is the leg of this chair?

Money.

Here is a piece of money; you know the name of it, do you not? (A cent should be placed before the child.)

Can you find a larger piece among these pieces of money? (Some cents and two-cent pieces should be laid before the child.) What is this called?

Salt.

What is this? (Some salt should be placed before the pupil.)

Smell it. Has it any smell?

Taste it. Has it any taste?

What color is it?

Is it like a piece of wood, or sand, or anything you know?

Do you like the taste of salt?

Do you like salt as much as you like sugar?

Chair.

Take this chair and try how many different things you can do with it. (It may be lifted, put down, carried, sat upon, stood upon, leant upon, drawn, pushed, etc., etc., etc.)

Colors.

Pick out from these colored cards (or cloths, worsteds, wafers, etc.) all the colors that are blue.

Pick out and put together all the red colors.

Pick out and put together all the green colors.

Pick out and put together all the yellow colors.

(And so on with the other colors.)

Which is dark blue?

Which is light blue?

Which is dark red?

Which is light red? etc., etc.

Cup.

Look at this (a cup should be before the child); what is it called?

Has it any color?

Can you smell this cup?

Could you eat this cup?

Do you know what the shape of this cup at the top is?

What is the use of this cup? *

* A little child was asked what the cup was made of, and replied, "Made of hard." When a child does not know the material of which an article is made, he usually says that it is made of its most obvious quality; and, excepting the grammatical inaccuracy, the answer is not much unlike that given by grown persons, who, when speaking of a thing they know little of, say, "It is made of something hard, something green," etc. The correctness of the answer must depend much upon the age and intelligence of the pupil; but with a child of three

Body.

How many hands have you?
How many feet have you?
How many noses have you?
How many heads have you?
How many eyes have you?
How many ears have you?
How many thumbs have you?

Horse—Cart.

How many wheels has that cart which is passing?
How many horses are in the cart?
What does the horse do to the cart?
Could you draw that cart? Why not?
What is the shape of the wheels?

or four years, the answer above given is all that should be required, if such a question is asked. He does not know anything of the material of which earthenware is made, but by the very extensive term, dirt. He calls whatever soils his clothes, dirt; the earth of the garden, dirt; the clay of the brick-field, dirt; and even when he shall have learnt enough to apply correctly the more accurate terms of earth, clay, chalk, etc., he is not yet by any means in a state to be instructed, by being taught to say that a cup is made of clay; its color, its hardness, and its brightness, are so strikingly different from clay, as the child sees clay, that he cannot understand, and hardly believes the fact. It will only be desirable to instruct him regarding the material of which a cup is made when he has gained much more knowledge, and is capable of comprehending the various processes which the raw material undergoes.

Color.

What is the color of your shoes ?

What is the color of your stockings ?

What is the color of your frock or trousers ?

What is the color of your bonnet or hat ?

What is the color of your hands ?

What is the color of your carpet ?

Coffee-pot.

Look at this coffee-pot — has it a top ?

Which is the top ?

What is the top of a coffee-pot called ? (The lid.)

Which is the bottom ?

Which are the sides ?

Is there anything to hold the coffee-pot by ?

What is put into the coffee-pot to make coffee ?

Where is the water put in ?

Where does the water go out ?

Chair.

Has this chair a seat ?

Has this chair a back ?

Has this chair legs ?

Has this chair arms ? etc., etc.

Table.

What is the table made of ?

What is its color ?

What is its shape on the top ? *

What does the table stand upon ?

Body.

Which is your right hand ?

Which is your right eye ?

Which is your left foot ?

Which is your left hand ?

Which is your right ear ?

Which is your left side ?

Do you think you use one hand more than the other ?

* It is not easy at first for children to understand, or to describe in language, forms for which there are not simple terms, such as square, round, etc. There are many objects in nature that have no regular forms, and when the child is required to name these forms, it is better to let the names that may be given by him remain uncorrected if there should be any tolerable resemblance. In the case of a horse-chestnut, the child's answer, that it was oval, was allowed to remain uncorrected. Tables are commonly round, or square, or oblong, with the corners rounded off. When a child is asked the name of the latter forms, he will be confused, and if he have sufficient general knowledge of the names of forms, it will be better to take a square piece of paper and round off the corners before him, showing that the paper, which was square, is now of the form of the top of the table, and when he appears fully to understand the resemblance, it will be proper to say the table is of the form of a square with the corners rounded off. He should even be required, not only to look at, but to feel the corners of the paper, and then to feel the paper when the corners are rounded off, in order that he may distinguish the different sensations.

Colors.

Can you show me anything that is white in this room?

Can you show me anything that is black in this room?

Can you show me anything that is red in this room?

Can you show me anything that is green in this room? etc., etc.

Sugar.

Do you know what this is? (Brown sugar should be shown.)

Do you know what this is? (White sugar should be shown.)

Do you like sugar?

What do you like to do with it?

What sort of taste has sugar?

Are these two sorts of sugar both sweet?

Are they alike in everything? (respect?)

Can you tell one from the other by the smell?

Try.

Height.

Which is the taller, the chair or the desk?

Which is the taller, the chair or the table?

Which is the taller, the table or the stove? etc.

Liquids.

What do you drink with your dinner?

What do you drink with your breakfast?

What color is milk?

Which is softest, bread or water?

If you let fall a piece of bread can you pick it up?

Why do you not take up water in the same way as you pick up bread? *

Which is most like water, glass or wood?

Can you drink glass?

How is glass like water? †

* The following were the answers of a little child. Q. If you spill water on your plate can you pick it up as you do bread? — A. No, but I can pour it up. Q. When you take a piece of bread between your thumb and finger, can you make your thumb and finger touch each other? — A. No. Q. Why not? — A. Because I nip the bread. Q. Why because you nip the bread? — A. Because it is hard. Q. Look at me — I make my thumb and finger touch each other in the water. — A. You have nothing to nip.

† This last exercise may be expanded in the following manner. A piece of common window glass may be taken — the finger should be held behind the glass and the child asked — Can you see my finger? The finger should then be put before a card, etc., then behind a card. Repeat the experiment with the glass, and vary the experiment until the child discovers, and expresses his discovery, that he can see a finger through glass but not through card. It is not worth while to trouble him with the word transparent at present, for no additional knowledge will be thereby obtained. When he is further advanced he may be told that things we can see through are called transparent. When the difference between the card, etc., and the glass in respect of its transparency, has been understood, take a drinking glass and repeat the above exercises; put the finger first into, then on the opposite side of the glass;

Eating.

Does the table eat? Does the cat eat?

Who eats in the house besides you?

Shoes.

What have you on your feet? — Anything besides shoes?

Why do you not go into the street without shoes?

Of what color are your shoes?

Are shoes made of the same stuff as stockings?

Is any part of a shoe like wood?

Is it wood?

Position.

1. Take this book (or any small object): hold it near you.
2. Hold it far from you.
3. Hold it behind you.
4. Hold it before you.

let the child evince clearly by words that he can see the finger through two portions of the glass; then pour water into the glass, repeating the preceding exercises. That the child also may clearly understand that water is transparent, independently of its situation in a glass (for he may perchance think that the water is rendered transparent by the vessel), put something, as a dime, into it, and show him that the dime can be seen notwithstanding that the water is between it and his eye; and repeat and continue the exercises on two or three occasions. Unless the examination be varied in every possible manner, the teacher cannot be safe against some false association in the child's mind.

5. Hold it above you.
6. Hold it low down.
7. Hold it high up.
8. Hold it to the left of you.
9. Hold it to the right.

Can you see it better before or behind you?

Why can you not see it behind you?

SECTION II.

Colors.

Tell me all the colors that you can find in the carpet.

Tell me all the colors that you can find in that chair.

Of what color is the cat ?

Of what color is the road ?

Of what color are the trees ?

Body.

How many shoulders have you ?

How many eyes have you ?

How many lips have you ?

How many joints on the left thumb ?

How many joints on the next finger ?

What is between your nose and chin ?

Have you anything in your mouth ?

Chair.

What is the back of this chair made of ?

What is the seat of the chair made of ?

What is the leg of the chair made of ?

What is the arm of the chair made of ? etc., etc.

Would this chair stand up without legs ?

Body.

What do you call this?

What do you call this? etc., etc. (The teacher should point successively to the head, face, nose, ear, etc., of the child.)

Use.

What is the use of this table? *

What is the use of this chair?

What is the use of this stool?

What is the use of this stove? † etc., etc.

* A child was asked this question. She paused a long time. The question was altered to "What is the table for?" but it was suggested that she knew the meaning of the first form. The answer was, "It is to put spoons on." Q. What else?—A. To put honey on. And she stated each sort of article that happened to be on the table. Children pick up their knowledge from individual objects; at first they are acquainted with single things only; it is some time before they can generalize so far as to give the obvious answer that might have been expected—"To put things on." With regard to the chair, its use being simply to sit on, the right and complete answer will be at once given, unless the child has been much interested in using the chair for some other purpose.

† To this question the child answered, "To put a light in." The question being answered in the summer time, the effect of the fire to give warmth was not very clear to the child, and the above is the answer she gave to several forms of the question. An inexperienced teacher would at once have corrected the answer, and told the child, "It is to put fire in;" but the answer of the child is nearly as correct. We do not put fire in the stove; fire or combustion is the result of a long process. It was therefore thought better to let the child's answer remain

Breadth.

Which is the broader, the stove or chair?

Which is the broader, the table or chair?

Which is the broader, the window or door? etc.

Bread.

Here is a piece of something: what is it?

Look well at it: are you sure that it is not a stone?

What is its color?

Did you ever see a stone of that color?

Try if you can find if this piece of bread has any smell?

Is it hard like a stone?

Body.

How many fore-fingers have you?

uncorrected until she became acquainted with all the operations connected with kindling the fire. If it had been thought desirable to proceed further, it would have been better to have attended with the child when the fire was being lighted, and to direct her observations; to have told nothing, but to have required that all the replies should have been the result of her own observations. Probably it would have been found necessary to diverge a little, so as to bring up the knowledge the child possessed and apply it to fire-lighting, and then to have told her what was absolutely necessary at the exact point when it was required. This mode of tuition has a strong tendency to break down the common habit of taking everything on trust from others, when a little observation and thought will enable the party to discover what is wanted for himself.

How many middle-fingers have you?

How many nails are there on your right fore-finger?

How many nails are there on your left little-finger?

How many nails are there on both your thumbs?

Colors.

Let the child point out the various colors in a flower which has several colors, as the hearts-ease, etc.

Let him point out the colors in a many-colored shawl or handkerchief.

Let him point out the colors of his own dress.

Let him point out the colors of the dress of some other person present.

Position.

Here are two books (or any small objects); put them together.

Put them apart or separate them.

Put them near each other.

Put them far from each other.

Put one upon the other.

Put one below the other.*

* These exercises will be of comparatively little use if the teacher strictly adheres to the words of the book. Many, very many of the questions will be ill understood by even a well educated child, three or four years old, if the words put down be alone used. The knowledge of words is very limited in

Put one within the other.

Put them so that one shall be on the right and the other on the left of you.

young children, and although they use many phrases which are long and complicated, they often attach little meaning to the separate words. A child who was asked the series of questions respecting position, when told to put one book below the other, remained still—she did nothing. Her mother suggested the word *underneath* instead of *below*—the books were then placed at once in the required position. When children are addressed by words and phrases which they cannot understand, they do not, like older persons, require an explanation; they do not say, “What do you mean?” or, “I do not know,” but they frequently take no notice, and act as if nothing at all had been said to them. Great attention and patience are required in this particular. A child’s silence may arise from this cause; or it may arise from his mind being completely absorbed by other trains of ideas; or it may arise from caprice; and it is often found that several seconds will elapse while the little creature is collecting and arranging from every corner of his half-furnished mind the words and ideas required for the answer. When this is the case he will, when beginning to speak, give evidence of what he has been about; he will stammer; his little lips will quiver; his eyes will gleam with an intelligence that his lisping tongue cannot express; he will begin again and again to drag out and push forward his unshaped ideas; and will at last, after no small labor, give a distinct, complicated, and really astonishingly elaborate answer. Many parents are shocked at this stammering, and they interrupt the child with “Don’t stammer—don’t stammer,” which is as unreasonable as if they were to say to an infant a year old, just trying to walk, “Don’t stagger.” The stammering is the necessary result of a crude and wordless mind that is trying to express itself; it is quite different from the stammering which is

A Slate.

What is the middle part of this thing called ?
What is it made of ? Has it any color ?
Is it hard or soft ?
What is the other part of the slate made of ?
What is the wooden part called ?
Do you think that the wooden part or frame is of any use ?
What is the color of the marks you make on the slate with the slate-pencil ?
Would it do as well to make black marks ?
What is the color of the marks people make on paper when they write ?
Why do they not make white marks ?
What colored marks does a lead pencil make on paper ?
If paper were black, what sort of marks would it be best to make ?
Do you know what pieces of slate are used for besides writing on ?

Spoon.

What will this spoon do that the knife will not ?
What will this spoon do that the fork will not ?
What can you do with a knife that you cannot do with a spoon ?

the result of physical organization. It will be well to caution the child not to begin to speak so soon, if he occasionally stammers.

What can you do with a fork that you cannot do with a spoon?

Horse—Cow.

Did you ever see a horse eat anything?

What did he eat?

What do cows live upon?

What do you live upon?

Dark—Cold.

When it is dark, what do people do that they may be able to see?

When it is cold, what do people do that they may warm themselves?

Body.

Where is your head?

Where is your neck?

Is your head below or above your neck?

Which are nearest to your neck, your shoulders or hands?

Are your eyes above or below your cheeks?

Where is your right cheek?

Where is your left cheek?

Is your nose on the right or left of your right cheek?

Is your nose on the right or left of your left cheek?

Are your cheeks outside of your nose?

Is your nose outside of your cheeks?

Which is nearest the floor, your knee or your foot?

What part of your foot is nearest the floor?

When you put your foot thus, what part touches the floor? (The teacher should put the heel on the floor.)

When you put your foot thus? (The teacher should put the toe on the floor.)

Likings — Aversions.

When do you like to eat?

When do you not like to eat?

When do you like to drink?

When do you not like to drink?

When do you like to play?

When do you not like to play?

When do you like to be near the fire?

When do you not like to be near the fire?

When do you like to go to bed?

When do you not like to go to bed?

Right and Left.

Which hand is this, your right or left?

Which ear is this, your right or left?

Which side of your body is this?

Which side of the room is to your left?

Which chair is to your right?

Pail.

What is this thing called?

What have you seen anybody do with a pail?

What is it made of? Is it all wood?

Why don't we have jugs instead of pails?

What is the shape of the top of the pail?

Is this pail as tall as you?

Is it half as tall?

Is it as large round at the top as at the bottom?

Is it as large round as you are?

Tell me of some things that could go into that pail?

Tell me of some things that could not go into that pail?

Pook.

Here is something—what is it?

Open it. Do you know what the inside is made of?

What is the outside made of?

Are books of use to everybody? Why not?

Colors.

Let the child point out and name the various colors in a nosegay.

Are all the blues in this nosegay alike?

Are all the reds in this nosegay alike?

Are all the yellows in this nosegay alike? etc., etc.

Actions.

What do you do after you have got up in the morning?

What do you do after that? What after that?

What after that? And after that?

What are you doing now?

What do you think you shall do after you have finished this?

And what after that?

A Fly.

Look at this fly. Can he move about?

How does he move about?

Can he move in any way that you can?

Can he move in any way that you cannot?

Has he anything that you have not?

Has he hands?

Has he more legs than you?

Do you know anything that can fly besides a fly?

Can a fly talk like you?

Is a fly smaller or larger than you?

Have you ever seen anything that is like a fly?

Shoe.

Look at this—what is it?

What is the part that the foot goes in called?

What is every part of the shoe that is not inside called?

Which is the part that goes on the ground?

What is the part above, and which does not touch the ground, called? (Upper part, or upper leather?)

Which is the lower part of the shoe?

Is any part of this shoe soft?

Is any part of this shoe hard?

When this shoe is put on the foot, how is it kept from coming off?

Do you know what this shoe is made of?

Parts of Objects.

What things have wheels?

What things have manes?

What things have leaves?

What things have legs?

What things have windows?

What things have horns?

What things have feathers?

What things have chimneys?

What things have wool?

What things have doors?

What things have walls?

What things have handles?

Leaf.

Look at this—what do you think it is?

What color is it of?

Is it longer than it is broad?

Is it as long as your finger?

Is it as broad as your finger?

Has it the same color on both sides?

What do leaves come from?

Which part was joined to a tree?

What is the part that joins the leaf to the tree called?

Is the stem or stalk of the same color as the leaf?

Which is smoothest, the upper or under side of the leaf?

Breadth and Height.

Is that window broader than it is high?

Is that door broader than it is high?

Gloves.

Do you ever see people walking about with shoes on their hands?

What do people often put on their hands?

What is the use of having gloves?

Here is a glove: what is this glove made of?

Did you ever see a glove that was made of anything else?

Why should we not wear shoes upon our hands?

SECTION III.

Qualities.

What things can you see here that are hard?

What things can you see here that are soft?

What things can you see here that are large?

What things can you see here that are small?

Cart.

How many wheels has that cart (or carriage) that is passing by?

Carriage.

Which moves fastest, the carriage or the cart?

What makes the carriage (or cart) move?

How many horses?

Is a carriage of the same use as a cart?

Do you know what makes the horses draw the cart easily?

Do you think the cart would be so easy to draw if the wheels were square?

Try and push that chair along. (One on castors.)

Now push that one. (Not on castors.)

Which is most easily pushed?

What is the difference between the chairs?

Far — Near.

Do you stand near me or far from me ?
 What other things are near me ?
 Tell me some things that are far from me ?
 Can you tell me another word for *near* ? (Close.)
 What does *far* mean ?

Horses — Fish.

Can horses see ? — can they hear ? — smell ? —
 feel ?

How do you know they can see ? — hear ? — smell ?
 — feel ?

Can fishes see ? — can they hear ? — can they talk ?

Did you ever hear a horse talk ?

What do horses do instead ?

Side — Top — Front — Back.

How many sides has your head ?

How many sides has your face ?

How many sides has your hand ?

How many tops has your head ?

How many tops has your shoulder ?

How many tops has your nose ?

How many fronts has your head ?

How many backs has your head ?

Money.

Are these two pieces of money both made of the
 same thing ? (or metal ?) (A cent and a two-cent
 piece should be shown to the pupil.)

Do you know what they are made of?

How many cents will buy as much as a two-cent piece?

Did you ever see a piece of money that was as much as five cents?

Here is another piece of money: what is it called?
(Dime.)

What is it made of?

What is this small piece of money called? (Half-dime.)

What is it made of?

Do you know how many half-dimes will buy as much as one dime?

Do you know how many cents will buy as much as this dime?

What shape is the dime?

Is any one of these pieces of money of a different shape?

Has this dime any color?

What is the color of the cent?

Do you think that this cent is heavier than a bit of bread of the same size? or than of a bit of wood of the same size?

Is the dime hard? Is it as hard as bread?

Can you make a mark on it with your nail?

Is the cent hard? Is it as hard as your hand?

Can you squeeze it up at all with your fingers as you can squeeze a bit of cloth?

(With some children, exercises on money should be performed later.)

Room.

What is the top of this room called ?
 What is the bottom of this room called ?
 How does the light get into the room ?
 What are the windows made of ?
 Are they made of anything besides glass ?
 What is the hole called by which you get into the room ?
 Is this room as wide as it is long ?
 What is it that warms the room ?
 What is the fire kept in ?
 What is the grate made of ?
 What is the use of the poker ?
 What is the use of the tongs ?
 What is the use of the shovel ?
 What are they made of ?

Actions.

If I were to go from one place to another on my legs, very fast, what should you say I was doing ?
 (Running.)

If I were to be joining together two pieces of cloth with needle and thread, what should you say I was doing ?

If I were to be making words on paper with pen and ink, what should you say I was doing ?

What is the noise called that you make when you are very much pleased ?

What is that noise which you make when you are very much hurt ?

What is the noise called that you make when you want me to know anything?

Paper.

Feel this; what is it called?

Has it any color?

Has it any smell?

Did you ever see any paper of another color?

Is paper good to eat?

What sort of paper is used for wrapping parcels in?

What sort of paper is used for writing on?

What kind of paper are books made of?

Eating and Drinking.

How do you feel when you want something to eat?

How do you feel when you want something to drink?

Where do you put bread and meat at dinner?

What do you do to the things you eat when they are in your mouth?

Can you chew water?

What do you do after you have chewed bread?

Could you eat by putting bread or meat into your hand instead of your mouth?

What do you do to water when it is in your mouth?

What do you bite with?

Can you bite with your hand?

What can you do with your hand that is most like biting?

Tub.

Is this a pail? What is this called?
Is it made exactly like a pail?
What is the difference between this and a pail?
Is it as tall as a pail?
Is it as broad as a pail?
Do you think it would hold as much?
What have you seen tubs used for?

Mop.

What is this long stick with a large soft thing fixed to the end?

What is the stick made of?
What is the bottom part made of?
What have you seen anybody do with mops?
Do you think a mop would do to sweep the road with?
Why not?
Can you lift a mop?
Can you lift a tub?

Flowers.

What do you like to do to flowers; do you like to touch them?

Do you like to smell them?
Do you like to eat them?
Do you like to look at them?
Do you like to pull them to pieces?
Do you like to burn them?

Meat.

Do you know what beef is?
Do you know what mutton is?
Do you know what veal is?
Do you know what pork is?
Do you know what bacon is?

Plate — Spoon.

Why do you use a plate instead of using your hands?
Can you lift anything with a spoon that you cannot lift with your hands?
What is the use of a plate?
What is the use of a spoon?

Stool — Chair, etc.

What has this stool like that chair?
What has this chair that the stool has not?
What has this arm-chair that the chair has not?
What has this table like a chair?

Bread.

Here is a piece of bread; how do you know that it is not a piece of cheese?

How is it you know that the bread is not a stone?
What is a large piece of bread called before it has been cut?

What is the outside of a loaf called?
What is the inside of a loaf called?
What difference can you find out between crust and crumb?
Do you know what bread is made of?

Horses—Road.

What part of the road do the horses walk and run upon?

What part of the road do you walk and run upon?

Why do not you always run upon the road with the horses?

Did you ever see any beast but a horse drawing a cart?

Trades.

What does the baker do?

What does the butcher do?

What does the cobbler do?

What does the grocer do? etc., etc., etc.

Body.

What do you do with your hands?

What do you do with your mouth?

What do you do with your legs?

What do you do with your feet?

What do you do with your eyes?

What do you do with your ears?

What do you do with your tongue?

What do you do with your teeth? etc., etc.

Spider.

Look at that little creature: what is his name?

What is he hanging to?

Can he fly? — Why not?

Can he move from one place to another?

What is the use of his web?

Has he any legs?

Can you see if he has eyes?

Sugar.

What happens to sugar if you leave it in water?

Is sugar of any use?

What do you see people use it for?

Can you get it in the fields and roads like dirt and sand?

Do you know any other things that are sweet as well as sugar?

If you put a lump of sugar into tea what happens to the sugar?

If you put a lump of sugar into tea does anything happen to the tea?

Position.

Stand in the middle of the room; now tell me everything that is before you?

Stand in the middle of the room; now tell me everything that is on your right?

Stand in the middle of the room; now tell me everything that is on your left?

Stand in the middle of the room; now tell me everything that is behind you?

Stand in the middle of the room; now tell me everything that is above you?

Stand in the middle of the room, and tell me everything that is below you?

Stand so that the window shall be before you.

Stand so that the window shall be behind you.

Stand so that the window shall be to your right.

Stand so that the window shall be to your left.

SECTION IV.

Tree.

What is the color of the trunk of that tree?

What is the color of the branches of that tree?

Has that tree anything more than trunk and branches?

What is the color of the leaves?

Are leaves thin and round and long like little branches?

On what part of the branches are the leaves placed?

Cup.

Tell me all the things that you have seen put into cups.

If a cup were made of wood do you think it would hold water?

If a cup were made of tin do you think it would hold water?

If a cup were made of cloth do you think it would hold water?

If a cup were made of paper do you think it would hold water?

Would a cup made of cloth hold anything?

Would a cup made of paper hold anything?

What are cups made of?

What else have you seen a cup made of ?

What is a very large cup called ?

What would happen to this cup if you were to throw it down ?

Would every kind of cup break if you were to let it fall ?

How could you manage to drink water if you had no cup to take it up in ?

Pens.

Do you know what this pen is made of ?

Do you know what this pen is used for ?

What did it once belong to ?

Are pens always made of quills ?

Horse.

Will a horse work ?

What does a horse do when you say he works ?

Will a cat work ?

Will a dog work ?

Did you ever see a dog drawing a barrow ?

Did you ever see a dog drawing a large cart like a horse ?

Why do not dogs draw the same carts as horses ?

Do men draw carts ? — Why not ?

What sort of a cart could you draw ?

Memory.

Tell me something you did yesterday.

Something else.

Something else.

Is there anything that you do always? (Breathe.)
What are the things you do every day?

Feather.

Look at this: what is it?
Is it soft or hard?
Is every part soft?
Which part is called the quill?
What is the shape of the quill?
Try if the feather is light or heavy?
Do feathers grow in the ground?
What use do you suppose birds have for feathers?
Can you tell me the reason why beds are often made of a bag of feathers?
Should you like to sleep on the stones out of doors? — Why not?
Should you like to sleep on the floor of the room?
— Why not?
What sort of things do you like to sleep on or to lie on?
Did you ever notice what sort of things the cat likes to lie on? and the dogs?
Do you know what birds' beds are called?

Qualities.

What things can you see here that are heavy?
What things can you see here that are light?
What things can you see here that are broad?
What things can you see here that are narrow?
What things can you see here that are shining?

What things can you see here that you can't lift?
What things can you see here that you can lift?

Salt.

Does anybody eat salt?
Do they eat it like bread in great quantities?
What do you like to eat salt with?
Do you know any other use that is made of salt?

Thread—String.

Here is a bit of string; undo this end of it. What does the string seem to be made of? (A number of thin bits or threads.)

Can you find out how these bits or threads are kept together? (The pupil should be encouraged to find this out, by taking a very short piece of string entirely to bits, and then trying to make it up again, which will show that the string is held together by the parts being twisted.)

Can you bend this string?
Can you break this string?
Could you twist a thin bit of wood about like this string?

Look at this bit of thread: is it like the string?
How do you know that it is not string?
Pull this little bit to pieces: is it made like string?
Tell me all the things you do with string.
Do you ever do anything with thread?
Did you ever see a rope?

Do you know what a rope is?

Could you tie up a parcel with a bit of wood?—
Why not?

Could you do this if wood would bend like
string?

Likings and Aversions, etc.

Tell me something that you like to do. Something else. Something else, etc.

Tell me something that you don't like to do. Something else. Something else, etc.

Tell me something that you can do. Something else, etc.

Tell me something that you cannot do. Ditto. Ditto.

Tell me the name of something that you like. Also the name of something you don't like.

Coals.

What is done to coals to make a fire?

If you put your hand very close to the fire, what happens?

If it were night, and there were a fire in the room, but no candle, would the room be quite dark?

Do you like to have a fire in the room?

Why do you like it?

Tell me all the things you know that a fire is useful for.

Carpet.

What is that large thing called that they put all over the floor of a room?

What is this carpet made of?

Do you like best to have the room with or without a carpet?

Do you know why we do not have a carpet on the ceiling? On the walls? On the roads?

Body.

How many fingers are there on your right hand?

How many toes are there on your left foot?

How many nails are there on your left hand?

How many ears are there on your right hand?

How many legs are there on your left hand?

Shoes.

What are both of your shoes together called?—
(A pair of shoes.)

Do you know what your shoes are made of?

Do people always wear shoes?

What else do they sometimes wear?

If you were always to be in bed, would shoes be of any use to you?

Or if you were always to sit on a chair?

Of what use are your shoes to you?

Plants.

In what places do flowers grow?

In what places have you seen trees grow?

Did you ever see apples grow? Where?

Did you ever see tables grow?

What is the rough outside of a tree called?

Did you ever see the inside of a tree?

What is the inside of trees called?

Places.

Which is the place for the table?

Which is the place for the chair?

Which is the place for the carpet?

Which is the place for the plates and dishes at dinner time?

Which is the place for the cups and saucers at tea time?

Which is the place for the cups and saucers when it is not tea time?

Which is the place for you at night?

Which is the place for you in the day time?

Which is the place for the dog?

Which is the place for the pig?

Which is the place for the lighted coals?

Which is the place for the lighted candles?

Which is the place for your shoes when you wear them?

Which is the place for your shoes when they are not on your feet?

Dimensions.

Is this slate longer than it is broad?

Is this room longer than it is broad?

Is this room longer than it is high? etc., etc.

Distances.

Is it farther to the door or window?

Is it farther to the chair or fire?

Is it farther to the stool or table? etc., etc.

Position.

What is before me now?

What is before you now?

What is behind me now?

What is to the right of me?

What is to the left of me?

Colors.

Tell me the colors of the things in the room.

Tell me the colors of the things out of the window.

Flowers.

Do you like flowers?

Why do you like them?

Do you know why people have flowers in their gardens?

Were all the flowers you have seen of the same color?

Were all the flowers you have seen of the same form or shape?

Were all the flowers you have seen of the same odor or smell?

Position.

Here is a picture ; which is the upper part?

Here is a picture ; which is the lower part?

Here is a picture ; which is the side to your right?

Here is a picture ; which is the side to your left?

Dinner.

Tell us the names of all the things that you have seen us use at dinner.

Hands.

What is the use of your hands?
Are they of any other use?
Of any other use? etc., etc.

Duty.

Can you tell me something that you ought to do?

Can you tell me something that you ought not to do?

Can you tell me something else that you ought not to do? etc., etc.

Comparison.

Tell me what parts the table, stool, and chair have that are alike.

Tell me what parts the table, stool, and chair have that are not alike.

Has either of them anything that one of the others has not got?

Knife, etc.

Would a knife and spoon do as well as a knife and fork when you are eating meat?

What are all the things you know that a knife is fit for?

Cooking.

What things are boiled ?

What things are roasted ?

What things are toasted ?

What things are baked ?

SECTION V.

Wood.

Do you know what this table is made of ?

Show me something else that is made of wood.

Point to everything in the room that is made of wood.

Is the stove made of wood ?

Are the walls of the room made of wood ?

Are roads made of wood ?

Has wood any color ?

What is its color ? Is it hard or soft ?

Is it good to eat ?

Where does it come from ?

Room—House—Shop—Church.

What is the place you are now in called ?—(Room.)

What is the room in ?

What is the house in ?—(In a garden, street, village, etc.)

Is this room a store ?

Did you ever see a store ?

What are stores for ?

Tell me the different stores you remember.

Are a church and a house the same ?

Is this house a church ?

Do you know any place that is a church?

What is the name of the very tall part of the church?

Did you ever hear any noise come from the church?

Is the church as large as a house, do you think?

Shoe.

Can you see anything in this shoe but leather?

Is the leather in all parts of this shoe exactly alike?

Why do they not make the sole of the shoe of the same thin, soft leather as the upper leather?

Did you ever see shoes that were made of anything but leather?

Did you ever see shoes made of paper?

Why do they not make shoes of paper?

Should you like to walk about in shoes made of thin muslin like the cloth of a gown?

Do you know what is the difference between a boot and a shoe?

Have a boot and a shoe any other difference?

Should you like to be always without shoes?

Why should you not like this? •

Is there any other reason why you should not like it? Any other reason?

Should you care if you were to be for a short time on a carpet when you were without shoes?

Are you ever without shoes?

Why do you take off your shoes when you go to bed?

In some parts of England, and in many parts of

Scotland and Ireland, the children, and sometimes the men and women, go without shoes and stockings,—their feet grow very hard, and they do not care much for cold and wet; but sometimes they have dreadful chilblains, and sometimes they get their feet cut and bruised. Do you know what a chilblain is?

In some parts of France the people wear wooden shoes; should you like to have wooden shoes instead of leather shoes?

Do horses have shoes?

What are horses' shoes made of?

Did you ever see a horse's shoe?

Do you know why horses' shoes are not made of leather?

Did you ever see shoes for cows, or shoes for pigs?

Why should horses have shoes, when cows and pigs have none?

Should you like to have iron shoes?

Do you think a horse could make his own shoes?

Why not?

Can you make shoes? Why not?

Did you ever see a dog with shoes on?

But you have seen dogs drag barrows in the road: why should these dogs not have shoes like horses?—(These poor dogs often tear their feet very much; but we can't make shoes for them, because they have not a hard foot or hoof like a horse, on which iron shoes could be nailed or fixed; and

if we made them leather shoes these dogs could not stand firm and pull a weight, for they have not broad soles to their feet as we have, but they tread on the tips of their toes.)

Tell me what animals you know wear shoes.

Body.

How many legs has a dog more than you ?

How many legs has a hen more than you ?

Which has most hands, you or a dog ?

How many more have you ?

Which has most hands, you or a hen ?

Has a dog more legs than a hen ?

Beyond.

What is beyond that table ? — (The chair, or whatever it may be.)

What is beyond the chair ? — (The wall, etc.)

What is beyond the wall ? — (The passage, etc.)

What is beyond the passage ? — (The garden, yard, etc.)

What is beyond the garden ? — (The road, or field, etc.)

What is beyond the road ? etc., etc., etc.

Fire.

Do you know if wood will burn ?

Did you ever see paper burn ?

Will thread burn ? Also string ? cloth ? stone ? iron ? water ? leaves ?

Why is paper not used to make fires with, instead of coal or wood?

If water is thrown into the fire what do you see?

Within.

What is within this room? — (The tables, chairs, etc., etc.)

What is within the table? — (The drawer, etc.)

What is within the drawer? — (A little box, or whatever there may be.)

What is within the little box? etc., etc.

*Water, Swimming.**

Here is a piece of wood: do you think it will swim?

* This exercise was introduced thus to a child between three and four years of age:—Q. When I put this piece of wood into a basin of water, what does it do; or where does it go?—A. There—(pointing to it.) Q. When I put this stone into the water what does it do; or where does it go?—A. There—(pointing to it.) Q. What part of the water does the wood go to?—A. The front. Q. What part does the stone go to?—A. The back. The child did not appear disposed to exercise its mind at the period of this conversation. When such is the case it is better to await a more favorable opportunity than to hurry the instruction by telling the child facts and words which at another time he will discover himself. Patience is most necessary with young children. Sometimes only two or three questions can be asked with advantage in the order here set down, and the teacher must continue the subject by the aid of his own memory and experience, and by experiment: he should

Try it in this basin of water.—(The pupil may try various things in a basin of water—first guessing whether they will swim or not.)

Will this stone swim?

Will this bit of iron swim?

Did you ever see a duck swim?

Did you ever see a dog swim?

What do you mean when you say a thing will sink?

What do you mean when you say a thing will swim?

Will anything swim if it sinks?

Tell me the names of some things that sink in water? and of some that swim?

invariably go back to the point at which the child's knowledge of the subject stops, and pursue the inquiry from that point, asking questions—sometimes leading questions—until the child makes the discovery—if it be a subject he can discover—or until the instant arrives when the particular word should be told to him, that is, when the precise point of his ignorance becomes manifest. At a second conversation the wood and the stone were placed in the basin of water; the same questions were repeated thus:—Q. What does the wood do? where does it keep or stop?—A. On the top of the water. Q. Where does the stone, etc.?—A. At the bottom of the water. Q. When the wood stays at the top of the water what do we say it does?—A. It swims. Q. When the stone goes to the bottom what do we say it does?—A. I don't know. The child was then told—it sinks. The child had previously known the word *swim*, but did not know the word *sink*.

Bread.

Tell me some things that are harder than bread?

Tell me some things that are softer than bread?

What is the use of bread?

Could you swallow a loaf at once?

What must you do before you can swallow it?

What is a thin piece of bread called?

Names.

Should you do as well without a name?

Why are you called (Jones) as well as (Mary)?

Are you ever called anything but (Mary Jones)?

If a man who did not know your name were to speak to you, what would he very likely call you?—
(Girl.)

Might he call you anything else?—(Child.)

Animals—Clothes.

Do you think sheep want clothes?

What have they instead of clothes?

What have dogs and cows instead of clothes?

Did you ever see any beast (animal) with clothes?

Who has clothes?

Milk.

There is something which is very nice; it is like water, but it is quite white; can you guess what I mean?

Thirst.

If you were not to drink anything for a long time how do you think you should feel?

Names.

What is my name ?

What do you call me besides this name ?—
(Mother, etc., as the case may be.)

What does your father call me ?

What does the servant call me ?

What does the baker call me ?

What is the baker's name ?

Why is he called baker ?

Why is he named Smith ? Why James ?

Who else are called bakers besides him ?

What is Carlo (the dog) called besides Carlo ?

If a man were to come here who did not know
Carlo's name, what would he call him ?—(Dog, or
terrier, etc.)

Sun — Moon.

Did you ever see the sun ?

Where was the sun when you saw it : was it in a
room, or lying on the road ?

Do you know if the sun has any color ?

Did you ever smell the sun ?

Can you touch the sun ?

Did you ever hear the sun make any noise ?

If you stand in the sunshine, do you feel as you do
out of the sunshine ?

Does the sun always shine ?

At what time is it that the sun never shines ?

Is there anything in the sky that is at all like the
sun ?

What have you seen in the sky besides the sun?

What do we have at night to light us, when we can't see the sun?

What have we to warm us when the sun does not warm us enough?

Did you ever see two suns?

Did you ever see half a sun?

Did you ever see the moon?

Where was it: was it on a table?

Does the moon give light like the sun?

Does the moon give as much light as the sun?

Grass.

Look at that grass.

Is it like bread?

What is the use of grass?

Who eat it for food instead of eating bread as we do?

Is grass in lumps like bread?

Do you know if grass has any smell?

Did you ever see any dried grass?

What is dried grass called?

Has it any smell? Does it smell like green grass?

Are grass and hay good to eat?

When a great quantity of dried grass is put together in a great heap, what is that heap called?

Body.

What is your head on the top of?

What is your foot at the bottom of?
What are at the ends of your arms?
What are at the ends of your fingers?
What are your arms on each side of?
What is in your mouth?
What is at the end of your feet?
What is between your head and shoulders?

Water.

Tell me something that water is used for. Something else. Something else.

Do horses and cows do anything with water?
If water were like wood or stones, could you wash with it? Could you drink it?

Did you ever see a boat?
What does a boat do with water?

If water were like milk, could you drink it? Could boats swim in it?

How can you carry water from one place to another?

Tell me the names of some other things that run about like water, if they are not kept in cups, jugs, or bottles?

Gloves, etc.

What is this? What is it for? What is its color?
What is it made of?
Which is the place for the thumb?
Look at this glove and this shoe: can you find out if they are alike in any way?
Tell me how they are not alike.

Why should they not make shoes with holes or little bags for each toe, for they make gloves with holes for each finger?

Did you ever see a glove made with only one space or bag for all the fingers?

Are shoes of any use that gloves are not?

Can you sew or tie anything as well when you have gloves on as when you have not?

Table.

What does this table stand on?

If all the legs were taken away at once, what would happen to the table?

Would the table be as useful to us on the ground as it is now?

Suppose the table had legs but no top, would it be of use then?

If there were no table here, is there anything we could use in the place of a table?

In some countries they have no tables; how must they sit to eat their dinners, and to do things that we do on a table?

If we had no tables, would chairs be as useful as they are now?

If we had no chairs or stools, would tables be as useful as they are now?

Wool.

Here is a piece of wool: do you know where wool comes from?

When you untwist this bit of string, what do you find that it is made of?—(A little bit of coarse worsted should be given to the pupil.)

When they twist wool into strings or threads, what is it called?

When wool is made into cloth, what is it called?

Can you find anything made of wool in this room?

Do you know what clothes are made of wool?

Money.

Is this cent good to eat?

Is it soft enough to eat?

What do people do with cents and dimes and other money?

If you had a cent, what would you do with it?

Could you do anything with a dime if you had one?

Did you ever see anything except money that was made of copper? Or of silver?

Did you ever see clothes made of silver or copper?

Light — Heat.

Tell me all the things you know that give heat.

Tell me all the things you know that give light.

Day.

What is the beginning of a day called?

What is the middle of a day called?

What is the end of a day called?

What is the time between the middle and the end called?

What is the time called that is after the evening?

What is the lightest part of the day?

What is the darkest time called?

Which is longest, an hour or a day?

Tree.

Did you ever see a tree or plant walking about?

Did you ever see a man or dog growing in the ground?

Did you never see a tree move at all in any way?

But will not a plant or flower move about if it is in a flower-pot?

If you were to be buried in the ground all but your head, do you think you should grow in branches like a tree?

Street.

Did you ever see water running in a street?

What part of this street does water run down most often?

Is the gutter higher or lower than the rest of the street or road?

What is the middle part of the street covered with?

Is the part of the street that men and women walk upon covered with stones also?

Is it covered with the same sort of stones as the middle?

What is the use of covering streets with stones?

Do you know what this sort of stone covering for streets is called? — (Paving.)

Why is the middle part of the street made so much wider than the foot-path?

Did you ever see a road that was covered by any other kind of stones than these large paving-stones?

Paper.

Will paper burn?

Will paper wash?

Will paper tear easily?

What thing do you think paper is most like?

Why do you not have a paper frock, or a paper pair of stockings?

If you were to soil a book, could you wash it clean as if it were a frock or a handkerchief?

Is cloth of any use that paper is not?

Is paper of any use that cloth is not?

Look at this piece of cloth and this piece of paper: how can you tell which is cloth and which is paper?

SECTION VI.

Basket.

Here is a basket: do you know of what it is made?

Is there any difference between what this basket is made of and what that box (or table, etc.) is made of?

Do you think it would be better if baskets were made of wood, like a box?

Lift up the basket: is it very heavy? Do you think it would be heavier, if it were made of wood?

Did you ever see a basket of a different shape from this?

Did you ever see a larger basket than this?

Did you ever see a smaller basket than this?

What is the use of this basket?

Do you recollect anything else that baskets are used for?

What are all baskets used for?

Look closely at this coarse piece of cloth; is it made of bits of anything?

What is this basket made of bits of?

Baskets, then, are a kind of cloth, made of what? or wooden what? This sort of cloth is called

basket-work, because baskets are made of it; and it is often called wicker-work.

Did you ever see a house made of wicker-work, or made like a big basket? They make sheds and huts sometimes of wicker-work, but they do not make houses of it, because it would not be strong enough if it were very large, unless it were made of very long and thick pieces of wood, and thick wood will not bend so as to make basket-work.

Colors.

Let the child point out the different colors in a colored picture.

After this let the child point out, separately, the different colors in a view out of doors.

Bodily motion and rest.

If you wanted to go from one end of the room to the other very fast indeed, what should you do?

What should you do if you wanted to go slowly?

What should you do if you wanted to go on one leg?

What should you do if you wanted to go on your hands and knees?

What must I do to put you on the other side of the room?

What must I do to put you on the other side of the room, if I first put you on a chair, but do not carry you or the chair?

Do you think you could stand up all day in the middle of the room without moving once?

Could you sit perfectly still all day without moving once?

Do you ever lie quite still without speaking, or seeing, or hearing?

When you want to go to sleep, how do you feel?

Do you feel sleepy after you have been asleep?

Did you ever see a dog or a cat asleep?

Do tables and chairs sleep? Do they eat and drink?

Can they move?

If I were to throw this chair to the other side of the room, would it not move?

What is the difference between a table moving and you moving?

Tell me what there is in this room that can move of itself?

Tell me what there is in this room that cannot move of itself.

Tell me the names of the different ways in which you can move?

Can a dog move in any of those ways?

Can a stick move in any of those ways?

Can a bird walk and run?

Can a bird hop and jump?

Can a bird move in any other way?

Can you fly? Why not?

Can dogs and horses fly?

Do you know anything except a bird that can fly?
—(Fly, bee, gnat, butterfly, etc.)

Can you do anything that a bird cannot?

Does a dog walk and run just in the same way you do?

Laughing—Crying, etc.

When you are very much pleased, do you make any noise?

Did you ever hear a dog laugh; or a horse?

If you were very much hurt indeed, what should you do?

Do cats cry like you? How do they cry when they are hurt?

Should you be able to hurt a cat if you beat her with a stick?

Should you be able to hurt a stone if you beat it with a stick?

Tell me the names of some things that you could not hurt by beating?

What could you hurt by beating?

Could you hurt yourself if you wanted to do so?

What do you and I do if we want to let each other know anything?

Can you make any noise with your mouth except laughing, and crying, and speaking?

Clothes.

Have you any clothes on that are made of cotton?

Have you any clothes on that are made of worsted?

Have you any clothes on that are made of linen?

Have you any clothes on that are made of leather?

Can you find anything here that is woollen or made of worsted?

Can you find anything here that is made of leather?

Can you find anything here that is made of cotton?

Can you find anything here that is made of linen?

Have you any clothes made of silk?

Is anything in this room made of silk?

Do you recollect ever seeing anything that was made of silk?

Wood.

Can you see the wood in that door?

Tell me the things you remember out of doors that are made of wood.

Is a stick of the size of a poker as heavy as a poker, do you think?

What is the poker made of?

Is wood hard?

What do people do to wood to make it of the shape they wish?

Do you know how they fasten pieces of wood together?

What are those men called whose trade it is to cut wood and fasten pieces together?

Tell me some things you know that carpenters make.

Tell me everything you recollect that wood is good for.

Animals.

Tell me the names of all the animals you can think of which people eat.

Tell me the names of the animals that give clothing.

What things do you eat that grow on trees?

What things do you eat that grow in the ground?

House.

Look at that house ; what is it made of ?

What is the door made of ?

What is the top or roof made of ?

What is the chimney made of ?

What is the window made of ?

What is just before the door of this house ?

Point to the front of this house.

Point to the back of this house.

Now point to each of the sides.

Where should you be if there were no houses ?

Do you like to live in a house ? Why ?

What are pigs' houses called ?

What are dogs' houses called ?

What are horses' houses called ?

What are fowls' houses called ?

What is the use of that window ?

What is the use of that door ?

Why do they have a top to the house ?

Are all houses of the same size ?

Time.

Which is the longer time, a day or a week ?

Do you know the names of the days of the week?

Try and say them.

Do you know how many of them there are?

Which is longer, a week or a month?

Do you know what the coldest part of the year is called?

Do you know what the hottest part of the year is called?

Speech. *

When you want me or any one else to know what you think or what you want, what do you do?

Can the dog or cat speak?

Can they do anything instead of speaking?

Did you ever hear a bird talk?

Can all children speak?

Could men or women speak always?

Places.

What is the name of the street (or house, etc.) you live in?

What is the name of the town (or village, etc.) you live in.

What is the name of the next street (or house, etc.) to this? What of the next? etc.

What is the name of the nearest village (or town, etc.) to this? etc.

When you stand at the door, what is there at your right hand?

When you stand at the door, what is there at your left hand?

When you stand at the door, what is there in front of you?

When you stand at the door, what is there behind you?

Tree.

Look at that tree — can it walk about? Why cannot it?

What is the part called that is in the ground and fixes the tree to the ground?

What is that part of the tree that is above the ground and near the ground called?

The trunk or stem is one piece at first; what is it afterwards, higher up?

Paint.

Can you see the wood that door is made of?

What prevents you from seeing the wood?

What color is that paint?

Is all paint of that same color?

Can you find any other colored paint in this room?

Do you know if paint grows on wood?

Did you ever see anybody painting?

How did he do it?

Is the paint on the door quite like the paint which you saw the man painting with?

Do you know if the paint on that door is thin or thick?

Do you know if paint is of any use? What use?

What kinds of things do you see that are painted?

Tell me a number of things that are not painted.
Why don't they paint the roads and streets?
Are the leaves of trees painted green?

Eating—Drinking.

Tell me the names of all the sorts of meat that people eat.

What things do people eat besides meat?

Tell me the names of all the sorts of vegetables that you have seen people eat.

What have you ever drank besides water? What else?

Is anything done to meat and vegetables before they are eaten?

Earth.

What color is the earth in the garden?

Is the earth in the fields of the same color?

What is the use of the earth in the garden?

What is it that often covers the earth in the fields and prevents you from seeing it?

Is earth hard, like wood or stone?

If the earth of the garden were like water, could you walk on it?

If the earth of the garden were like stone, could you walk on it?

Where is our garden; in front of the house, or behind, or at the side of the house?

What is in our garden?

What is the difference between our garden and a field?

Tell me what you have seen grow in the fields.
Are all the fields you have seen of the same shape?
Are all the fields you have seen of the same size?

Sun—Moon—Stars—Sky—Clouds, etc.

Did you ever feel it hot in the moonshine?
Did you ever see the sun and the moon shining at the same time?

At what time is it that the moon shines?

At what time is it that the moon does not shine?

Do you always see the sun in exactly the same part of the sky? (Children ought to be told to observe the sun, if they cannot answer correctly.)

What shape is the sun?

What shape is the moon?

Did you ever see the moon of any other shape?

Do we have candles at night when the moon shines? Why?

Can you always see the moon in the night?

Can you always see the sun in the daytime?

Did you ever see a star?

Did you ever see more than one star?

Did you ever see more than one at the same time?

Do the stars make it light (or give light) like the sun and moon?

Was it ever quite dark when you saw the stars?

Do stars appear round, like the sun or moon?

Do you ever see the stars in the daytime?

Did you ever hear the stars or moon make a noise?

Do you think stars are pretty or ugly things?

Did you ever see the sun low down in the sky?

What time of the day is it when the sun is high up?

What time of the day is it when the sun is low down?

Did you ever notice if the sky has any color?

Is the sky always blue?

What is the color of the sky in a dark night?

Did you ever observe the color of the sky when the moon was shining? ("You should notice next time you are out at night," should be the rejoinder of an instructor if the child says he does not know.)

Do you ever see anything in the sky besides the sun, moon, and stars?

Have the clouds any color?

Have they all the same color?

Did you ever notice their color in bad weather?

Garden—Fields.

What is put round our garden?

Why was the hedge (fence or wall) put round the garden?

Is anything ever put round fields?

Do you like the garden? Why do you like it?

Did you ever see any small living creatures in the garden?

Do you remember what they were?

What is done to the garden to make it soft?

What is the earth, when it is rough, made smooth with?

What is the part of the garden that you tread on called?

What is the path made clean with?

What is done to the plants in very dry weather to make them grow?

Are the parts of the garden where the flowers grow called by any name?

What are the parts where cabbages and peas grow called?

Are the fields you have seen larger than the gardens, or are the gardens larger than the fields?

Tell me all the things you remember that grow in fields.

What beasts have you seen feeding in fields?

When a great many trees grow close together, what are they called? (A wood or forest.)

Weather.

What do people mean when they say that the weather is bad?

What happens when the weather is bad?

Is there anything besides rain in bad weather?

Do you like rain? Why not?

What is rain made of?

Where does it come from?

Do you know if rain is of any use?

Did you ever see any snow?

What color is snow?

Did you ever feel snow? Is it hot or cold?

Can you lift snow in your hand? Did you ever try?

Can you lift water in your hand?

Is snow hard or soft?

Did you ever see it rain when there were no clouds?

Do you know what snow will turn to if it is warmed?

Do you know what ice is? Did you ever see any?

Is it hard or soft?

Do you know what a piece of ice would become if it were kept by the fire?

Is ice like snow in any way?

What do people say that water is when it becomes ice? (Frozen.)

In what kind of weather does water turn to ice, and rain turn to snow?

In winter is the weather warm or cold?

In summer is the weather warm or cold?

When is there ice, in winter or summer?

What do people do to make themselves warm in winter?

What do they do besides having fires?

Were you ever very cold?

Does it hurt you to be very cold?

Do you like warm weather best, or cold weather?

What is the time called when the weather is always warm?

Do you know whether it is in warm or cold weather that flowers grow, and apples, and cherries?

Time.

When you say a week, is it the same as saying how many days?

Do you know how many weeks there are in a month?

How many months must I say instead of a year?

Places.

If I were to put the table on the bed would that be its place?

If I were to put the table close against the fire, would that be its place?

Which is its place?

Why is that part of the room made the table's place?

If the pig were to come into the parlor, would that be his place?

If the pig were to go into the bedroom to sleep, would that be his place?

Which is his place? Why is the sty made his place?

Has your doll (cart, top, whip, etc.) got any place when you are not playing with it?

Do you ever lose it?

When you lose it what do you do?

If you were always to put it into that drawer (or its place) when you have done playing with it, should you ever lose it?

Is there any place for the stockings you are now wearing?

Is there any place for the stockings you are not wearing?

Would it not be as well if one of your stockings that you have not got on were thrown under the bed, and another put in this drawer, and another thrown under the table, and another put in the closet?

What is the use of putting things in their places?

Which is the place for my needles and thread?

Would it be any harm if I threw them in all sorts of places; such as under the table, behind the drawers, or in the closet?

I should not find them when I wanted them; but would there be any other harm? (They would get dirty and perhaps trod on and spoilt.)

Seasons — Weather — Wind — Air.

Do the trees look (appear) the same in summer as in winter?

In wet weather what happens to the roads and streets and ground?

In dry weather is the ground muddy?

In dry weather what is it that blows about and gets into your eyes?

Does the dust blow about in wet weather?

What becomes of the dust when the weather is wet?

Do you know if there is ever any rain in summer?

If you were obliged to go out in the rain, how could you keep yourself from being wet?

If you were obliged to be out much in cold wea-

ther, how could you keep yourself from being cold ?
(By dress, exercise, or both.)

Did you ever feel the wind blow ?

Can you see wind ? Can you smell it sometimes ?
Can you taste it ?

Can you feel it if you hold out your hand when
the wind blows ?

Do you always feel wind blowing when you are
out of doors ?

Open your hand wide and swing it backwards and
forwards very fast. Do you feel anything ?

What you feel is air, which is everywhere about ;
you can't see it, and you can't feel it unless it moves
fast ; when it moves fast it is called wind.

Take this thin book (or fan, or handkerchief)
and move it up and down : do you feel the air or
wind ?

Did you ever blow the fire with the bellows ?

What came out of the bellows ; do you know ?
(The bellows make the air move fast into the fire.)

Does the air, when it moves fast, feel cool or
warm ?

Try if you can blow with your mouth.

Can you find out what it is that you do when you
breathe ? Take a great breath and try.

Water.

If you dip your finger in water, and do not wipe
the water off, does the water always stay on your
finger ? Try.

Is water like any hard thing you know of in any way? (Glass.)

Money.

When people go with money to the baker's, what does he give them for it?

What do you suppose that the baker does with the money he gets for the bread? (He gives some to the miller for flour, some to the shoemaker for shoes, and some to the butcher and some to the grocer, and he has to buy clothes for himself and wife and children with some of the money.)

Seasons.

Summer is called a season of the year; winter is also called a season; but there are two other seasons. One comes after winter and before summer, and the trees and flowers then come out; what is this season called? The last season is after summer and before winter; what is it called?

How many seasons are there altogether?

Can you tell me all their names now?

Storm, etc.

Do you know what thunder is?

Is it anything you can see? or hear?

Did you ever see lightning?

What does it look like?

Do you know what hail is? Did you ever see any?

What is it made of?

Have you ever been in a fog?

Is a fog like anything you know? (Steam, smoke.)

What is it that you cannot do well in a fog?

Did you ever see dew? What is it made of?

Have you seen dew more at one time of the day than at another?

Were you ever in a storm? Did you ever see one?

What is there in a storm? Is there rain? Is there sunshine?

What is there besides rain?

Boat.

Can you tell me the name of a thing which is put in water, and which men get into when they want to go on the water?

Do you know what boats are made of?

Do you know what uses water is of?

Do boats stand still on the water always?

Did you ever see a boat move on the water?

Did it move of itself?

What made the boat move?

Men would not need boats if they could do what on the water?

Weather.

What part of the day is it when you get up from bed and dress?

Is it dark then?

What makes it light?

Where does the light come from?

Where is the sun?

Has it any color?

Can you touch the sun? Why not?

Does the sun always shine all day?

Is the sun in exactly the same part of the sky all day?

What do we say the sun is doing early in the morning when it can just be seen? (Rising.)

When you stand in the sunshine how does it make you feel?

What color is the sky?

Did you ever see anything in the sky besides the sun?

Can you always see the sun in the day?

What hides it sometimes?

Why do the clouds hide the sun?

Did you ever notice the color of the clouds?

Are all the clouds of the same shape?

Are all the clouds of the same size?

Are all the clouds of the same color?

Did you ever see anything come from the clouds?

Where does the rain go?

How do the clouds look when it is going to rain?

Do the clouds hide anything besides the sun?
What?

When there are clouds do they always cover all the sky?

Do the clouds ever go away after they have come?

Did you ever see the clouds move?

Do they make a noise when they move?

Did you ever see anything in the sky when the sun was shining while it was raining?

Do you recollect what the rainbow looked like?

Did you ever notice what happens to the sun in the evening?

If you see a very black cloud what does it make you think of?

What do people take out with them to prevent the rain from wetting them?

PART II.

PRACTICAL EXERCISES FOR THE SENSES AND HAND.

SECTION I.

1. *Knot.*

LET the pupil be taught to tie a simple knot with string.

2. *Size.*

Let the child be asked which is the larger of two coins that are placed before him; namely:— a two-cent piece or a quarter of a dollar; a dime or a cent.

3. *Feeling.*

Let a large bunch of keys be given to the child, who should be required to point out each one that is described by the teacher; viz.:— the longest; the shortest; the thickest; the heaviest; the most crooked, etc.

4. *Hands.*

Let the pupil shut his hands—open them—shut the fingers but not the thumbs.

5. Odors.

Flowers, spices, or any objects having a strong odor, may be first shown to the pupil, and then put separately into a thin handkerchief for the pupil to discover by the smell.

6. Seeds.

Mix together a handful of different kinds of grain or seeds, and let the pupil separate them, and tell their names.

7. Buttoning.

Let the pupil try to button and unbutton something easy, with both hands.

8. Buckling

And unbuckling will also be found a good exercise for the hand and eye.

9. Length.

Let the child be asked which of two objects that are before him is the longer. Small objects that can be compared easily, should first be taken; as the thumb and finger; a pen and pencil; slate and book; two books; spoon and fork; shoe and book; snuffers and work-box, etc.; and the pupil may, if necessary, measure one against the other, or compare them by measuring them with a string.

10. Breadth.

The same exercise may be done on the breadth of objects.

11. Pricking Paper.

Outlines such as those at Nos. 55, 62, and 76, may be drawn on paper for the child to prick out with a pin on a cushion.

12. Touch.

Let the child discover by feeling only, and without seeing, the following objects (or any other simple and well known objects lying about), and tell their names; viz.:—a bit of stick; a stone; a pencil; pen; slate-pencil; pincushion; bit of paper; cloth, etc. As the child's eyes are liable to be heated if he is blindfolded, it will frequently be sufficient to place the objects in a bag or handkerchief, or to throw a handkerchief between his eyes and the objects.

13. Knots.

The pupil should be taught to untie as well as to tie the simple knot in No. 1.

14. Forms.

A variety of geometrical and other figures may be cut out of a thick sheet of pasteboard for the pupils to put back into their proper holes.

15. Colors.

Let the pupil name the colors of various objects in the room or place where he is.

16. *Smell.*

Let the pupil smell the following objects without seeing them, and tell what they are; viz.:—cheese; tea; coffee; a rose or any strongly scented flower.

17. *Taste.*

Let the pupil taste very small portions of the following things, without seeing them, and tell what they are; viz.:—cheese; bread; milk; water.

18. *Buttoning.*

Let the pupil try to button and unbutton several buttons quickly.

19. *Buckling*

May be tried in the same manner.

20. *Knot.*

Let the pupil tie a double knot.

Fig. 1.



Fig. 2.

21. *Thickness.*

Let the pupil be asked which of two objects before him is the thicker; as two books; a book and a table; a saucer and a knife; his thumb and little finger.

The above exercise may be varied by asking the child which of two present objects is the thinner;

as the legs of the table or of the chair; the door or the wall; his hand or his arm.

22. Forms with Bricks, etc.

Let the child arrange some wooden bricks or pebbles, or any small objects that are at hand, so as to represent a square and a triangle. This exercise may also be performed with cards, beads, pins, etc.

23. Bricks, etc.

Let the child try how many ways he can discover of placing a wooden brick or a book; next let him try with two wooden bricks or books.

24. Needles.

Let the pupil try to thread a large packing-needle or bodkin.

25. Measuring.

Let a foot measure be shown to the pupil, who should be required to guess the length of a variety of objects in feet, and to measure each object, as a check upon his estimate. When there are several pupils, the corrector's place should be taken by each pupil in turn. A piece of stick or string, a foot long, will answer the purpose of a measure.

26. Feeling Coins.

Let the children discover, by feeling only, and without looking, which is larger of two coins, pebbles, and any familiar small objects, first when they

are felt together, afterwards when they are felt successively.

27. Heat and Cold.

Let the children touch a variety of objects, and say which feels warmer of any two, and which colder; as metal, glass, wood, cloth, stones, etc.

28. Dark.

Let the pupil be sent into a dark room or passage to fetch something, the place of which he knows well; as a basket, stick, book, stool, umbrella, etc.

29. Colors.

Let the pupil be asked to touch any red objects in the room; also, successively, a white, black, blue, green, and yellow object.

30. Arrangement.

The pupil should arrange a small quantity of mixed grain or seeds, first according to their size, then according to their color, and afterwards according to their shape and general resemblance.

31. Voices.

The pupil may find out persons by the sound of their voices only, when they speak one word or sing one note.

32. Sounds.

Let the pupil do various things which cause a noise, while he is unseen by another pupil, who

should try to discover what has been done, from the sound only: as walking, running, and hopping across the room, clapping hands, striking the table, wall, etc.

33. *Knots.*

The child should try to join together two pieces of thin cord or string, by placing the ends together, and then tying them in a simple knot.

Fig. 3.



The pupils may also try to tie single and double knots, Nos. 1 and 20, in thin thread, first in the middle of the thread, and afterwards as near the end of it as possible.

34. *Paper-folding.*

Little children may begin by doubling a slip of paper thus—

Fig. 4.



by rolling it; and by folding two pieces alternately over each other, thus—

Fig. 5.



35. Arrangement.

When children have gathered a number of flowers, they may arrange them, first, according to color; second, according to size; third, according to smell.

36. Feeling.

When there are several children, let each one discover all the rest by feeling their clothes only, and without looking.

37. Feeling.

Let several small objects, such as a marble, thimble, stone, cent, etc., be put into a handkerchief or bag, and the child be required to tell, by feeling only, what objects are there.

38. Hand.

Let the children try to shut all the fingers of the right hand, except the thumb and forefinger; then all but the forefinger; then all but the little finger.

39. Roughness.

Let the child touch two objects, and discover which is the rougher (the difference of roughness should be considerable at first, and should gradually decrease as the child improves); as face or head; woollen or cotton cloth; brown or white paper; a stone or bit of wood; a stone or tile; cotton cloth or silk.

40. Size.

Let the child say which of two large objects is the larger, as the room or the passage; the parlor or the kitchen; the different beds in the garden; the chair or the high stool; the table or the school-desk; the room floor or the ceiling; his hand or his foot; two known trees; two known persons, etc.: present objects should be commenced with, and the exercise may conclude with such absent objects as are well known.

41. Smell.

Let the pupil discover by the smell only, various simple and well-known objects, as leather, brown paper, vinegar, milk, candles, and several flowers and plants, etc.

42. Taste.

Let the pupil taste small portions of such objects as the following, and state what those objects are: biscuit, butter, apple, turnip, carrot, pear, vinegar, etc.

43. Sounds.

One pupil may strike various objects which give a sound that is easily recognized, and another pupil should guess what has been struck: as the table, floor, grate, poker, bench, glass, tumbler, jug, etc.

44. Measuring.

The pupils should first measure several objects with a yard measure; afterwards they should take it

by turns to guess the length of surrounding objects in yards, and verify their estimate by measuring.

45. *Feeling.*

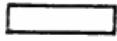
The child should distinguish persons merely by feeling their hands.

46. *Arrangement.*

Let the child try in how many ways he can arrange three wooden bricks,* old books, or pebbles, etc., and afterwards four similar objects.

* No toys admit of such various combinations, and give such unceasing pleasure to young children as wooden bricks. Boxes of a very defective kind are sold at the toy-shop, for it is found that parents will not pay the price of a well-made, durable toy, though they will spend large sums on cheap rubbish. Wooden bricks should be made of oak, or some heavy wood planed into rods $\frac{3}{4}$ of an inch square, cut into lengths of $1\frac{1}{2}$ inch, 3 inches, and $4\frac{1}{2}$ inches—100 of these are not too many. The ends should be cut flat so that the bricks may stand upright. Various additions might be made, such as a few pillars $4\frac{1}{2}$ inches high, a few arched pieces 3 inches long, $1\frac{1}{2}$ deep, and $\frac{3}{4}$ inch wide, etc.

Fig. 6. Fig. 7. Fig. 8. Fig. 9. Fig. 10.



This toy might be made by any cabinet-maker, and if there were any demand, it could be sold cheaply. It cannot be broken, or sucked, or swallowed, and with ordinary care, one set would last many years.

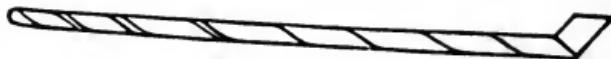
Let him try to build a cross with the wooden bricks in various ways.

Let him try to build a cube or solid square with the bricks, or with old books.

47. *Paper-folding.*

The child should try to fold slips of paper for lighting candles. They may be folded over lengthwise twice or three times: or they may be rolled round thus:—

Fig. 11.



48. *Arrangement: Shells.*

The pupil may arrange a few small shells (or beads), first according to size, then according to color, then according to shape.

49. *Parcels.*

The pupils may be exercised in wrapping up in paper, and tying, small parcels, containing one book, two books, etc.

50. *Touch.*

Let a few pease and beans be put into a bag or handkerchief, and the pupil be required to take out all the beans by feeling only.

51. *Darkness.*

The pupil may be sent into a dark room or pas-

sage to fetch something, the place of which has been told to him.

52. *Length by Feeling.*

The child should feel two small objects and tell which is the longer without looking at them, but he may feel them both at the same time: as two sticks; two pens; two pencils; a pen and a pencil; two books.

53. *Feeling Coins.*

First let a two-cent piece be put into a child's hands, and then a quarter of a dollar, and let the child tell without looking, which is the two-cent piece and which is the quarter of a dollar. The same exercise may be done with a dime and a cent; a lump of stone and a lump of sugar, etc.

54. *Sounds.*

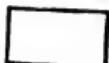
A table, jug, or any object at hand, may be struck with a stick three times by one pupil, and another should say which blow was the loudest and which was the least loud. Four blows may afterwards be given.

SECTION II.

55. *Paper-cutting.*

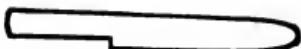
The child should try to cut a piece of paper into a small oblong.

Fig. 12.



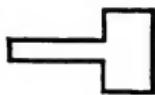
Then into the form of a knife.

Fig. 13.



And a mallet.

Fig. 14.



The pupil may require to be shown at first how to cut these figures out. Children who are not in the habit of handling scissors are very awkward at first.

56. *Knots.*

The child may make over again all the knots he already knows; and may then untie them; and try to make the following triple knot in thick string until he can do it readily.

Fig. 15.



Fig. 16.



57. *Rushes.*

A whip may be formed with rushes; a dozen or two being laid evenly together with the thicker parts at the same end, and the whole bound round with other rushes.

58. *Feeling.*

Let three coins of nearly the same size be given to the child, who should, without looking, select the largest and least: three stones, three pencils, pens, books, etc., may afterwards be tried; and the exercise may be varied by requiring the pupil to select the middle-sized object of the three.

59. *Weight.*

The same exercise may be done, weight being substituted for size.

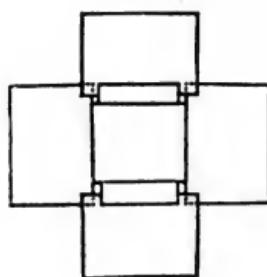
60. *Smell.*

A strongly scented flower may be put into a handkerchief, and discovered by the smell.

61. *Cards.*

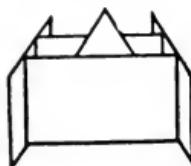
A pancake may be made with cards, thus:—

Fig. 17.



A sentry-box may be made thus:—

Fig. 18.



Card-houses are well-known.

62. *Paper-cutting.*

The following forms may be cut out of paper without much difficulty. They should be made much larger than the drawing.

Fig. 19.

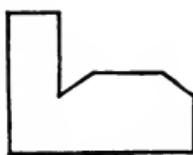


Fig. 20.

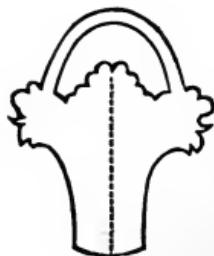


Fig. 21.

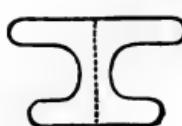


Fig. 22.

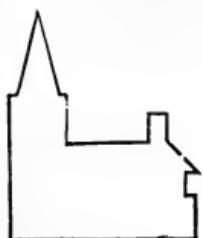


Fig. 23.



Fig. 24.

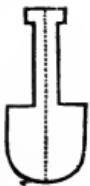


Fig. 25.



Fig. 26.



63. *Balancing.*

The child may try to balance, on his finger, small objects, as pens, pencils, bits of paper, stick, etc., by their middle.

64. *Measuring.*

The pupil may be exercised with such questions as these:—Is this pencil twice as long as your finger? Measure and try. Is the pencil half as long as the slate? Is this book twice as long as your hand? Is it twice as long as your hand is broad? How many times as long as your book is the table? How many times the length of your book is the table high? A chair and various other objects may next be compared with the child's book.

Any other familiar object may also be taken as a standard for estimating and measuring objects.

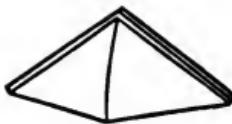
65. *Paper-folding.*

An oblong piece of paper may be folded into a cocked hat thus:—

Fig. 27.



Fig. 28.



66. *Needles.*

The pupils may try which of them can thread one (or two) stocking or packing-needles most quickly.

67. *Blindfolded.*

Let the pupil be blindfolded, or sent into a dark room, and told to fetch some known object which is in one of two places.

The difficulty of the last exercise may be increased by mentioning three places to the pupil, in one of which the object is.

68. *Figures by feeling.*

The plain geometrical figures, cut out in the card or stiff paper, may be distinguished by the touch only, and the number of their sides, angles, etc., told: viz., a triangle, square, oblong, pentagon, circle, oval, semi-circle, etc.

69. Colors.

Let the teacher point to some colored object, and ask the child what other object it is most like in color.

Let the pupil point out some object in the room that is entirely of one color; then one of two colors; then one of three colors.

The pupil may arrange and thread beads of different colors.

70. Smell.

Let two strongly scented objects be smelled by the child at the same time; he should not see them, but should be told that there are two objects, and should try to guess what they are.

71. Taste.

Very small pieces of various fruits may be put on the child's tongue successively, or together, and he should be required to say what they are.

72. Feeling.

No. 3 should be performed by the pupil when only allowed to feel the keys.

73. Tones; high and low.

Two or three glasses may be struck by the pupil that he may distinguish the difference between the high and the low notes. Two glasses having a marked difference of tone, may be struck first; then

three may be taken, the pupil finding out the highest, lowest, and middle tones.

74. Tones; loud and gentle.

The two glasses first taken may now be struck so as to exemplify the difference between the high and low, and loud and gentle sounds, the high and low toned glasses being alternately struck most forcibly. The same thing may be done with three glasses.

75. Touch.

Leaves of two or three of the plants most familiar to the pupil, may be given to him to discover by feeling only.

76. Paper-cutting.

The pupil may cut out in paper the following forms; the paper should be doubled first. If necessary, the teacher, or an older pupil, should cut the figures out previously as models.

Fig. 29.



Fig. 30.

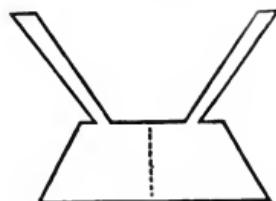


Fig. 31.

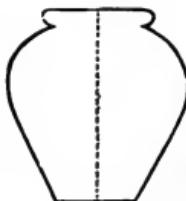


Fig. 32.



Fig. 33.



Fig. 34.

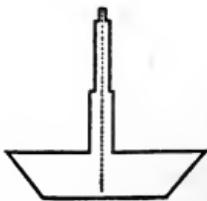


Fig. 35.



77. *Bows.*

The pupil should be taught to tie a single bow; and should practise in various ways, and at last with their shoe-strings.

78. *Knots.*

The following loops and knots for joining string may now be learned:—

Fig. 36.



Fig. 37.



Fig. 38.

79. *Weights.*

The child may feel a pound weight and a half-pound weight, and then estimate the weight of a variety of objects around, which, at first, may consist of an exact number of pounds, as 1, 2, 3, or 4lbs.; and afterwards of fractions of pounds.

80. *Feeling Coins.*

The child should feel three coins, not together, but successively, and state which was the largest and which the least.

81. *Warmth.*

The child may be asked which feels warmest (or coldest) of several objects lying about, as scissors or

thread; a shell or shoe; table or chair; book or frock; wood or carpet, etc.

82. Roughness.

When out of doors the children may be asked to pick up two stones, one rougher than the other; also two of equal smoothness; next, two, one of which is smoother than the other; also two rough stones and two smooth stones.

83. Hardness.

The child may discover, by the feeling only, which of several objects is the hardest; viz., his hands or the chair; cloth or paper; bread or wood; the hardest thing on the table; the softest thing on the floor; the softest and the hardest part of his dress, etc.

84. Parcels.

A few beans, pebbles, or other small objects may be neatly folded up in paper, with or without being tied.

85. Paper-folding.

The pupil may try to fold paper into purses, thus —

Fig. 39.

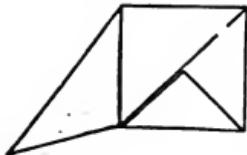


Fig. 40.



86. Colors.

Let the pupil be asked how many colors he can

find in any object in the room or place where he is, and what they are; as in a book, table, twig, flower, tree, etc.

87. *Smell.*

A variety of objects may be successively covered with a handkerchief, and the pupil may try to discover them by the smell.

88. *Paper-cutting.*

The pupils may cut out the following objects in paper:—

Fig. 41.

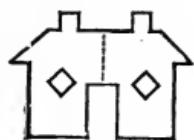


Fig. 42.

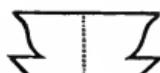


Fig. 43.

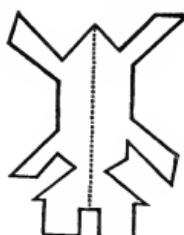


Fig. 44.



Fig. 45.

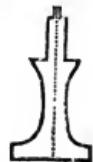


Fig. 46.



Fig. 47.



Fig. 48.



Fig. 49.



Fig. 50.



Fig. 51.

89. *Sounds.*

The pupils may try to puzzle each other by making various noises, such as crumpling paper, shaking a handkerchief, switching a cane, etc.

90. *Smell.*

The pupils may go round the room or place where they are, and try to discover what objects they can and cannot smell; each acting as a check upon the rest.

91. *Bows.*

The common double bow may be tied. The pupil may tie a handkerchief round his neck in this manner; he may also tie his shoe-strings; and may finish by tying the same bow in thin string and thread.

92. *Knots.*

The attempt may be made to tie the simple knot (No. 1) with one hand. The left hand should be exercised in this way as well as the right.

93. *Buttoning,*

And fixing hooks and eyes, may also be attempted with one hand.

94. *Platting.*

The common single plat should now be tried with thick string.

95. *Rushes*

Or straw may be easily formed into mats, of various sizes, in this manner :—

Fig. 52.

96. *Measuring.*

A bit of card, or stick an inch long, should be given to the children, who may measure their fingers, hands, pencils, books, slates, dolls, tops, etc. When somewhat accustomed to the exercise, the children may guess first, and measure afterwards.

97. *Pacing.*

When children are in the open air, they will often be amused by endeavoring to ascertain how many of their steps or paces a shrub, tree, post, or building, etc., is distant, beginning with very short distances. The exercise may also be performed in a room.

98. *Thickness.*

The pupil should feel various kinds of paper, to ascertain which is thickest; also various kinds of cloth, silk, leather, etc.

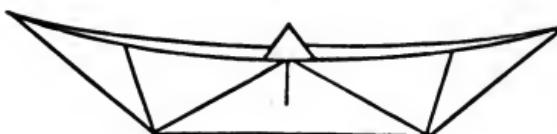
99. *Weight.*

An ounce and a half-ounce weight may be given to the pupil, who should afterwards estimate in ounces the weight of small objects not exceeding five or six ounces, nor falling short of half an ounce.

100. *Paper-folding.*

The pupil may fold paper boats in this manner:—

Fig. 53.

101. *Wooden Bricks.*

The pupils should be encouraged to build cottages, houses, etc., with wooden bricks, or with books of little value.

102. *Paper-pricking,*

As in No. 11, may be tried without any outline. The simplest forms, as Nos. 55 and 62, will be most suitable, and should be before the child who is performing the exercise.

103. *Size.*

Four objects, slightly differing in size, should be successively given to and taken from the child, who should not see them: he should be asked which of the four was the largest, and which was the least. After a little practice, he will be able to tell distinctly

the order of the four objects as to size. Buttons, nuts, counters, pebbles, or any small objects, are suitable.

104. *Warmth, Hardness, Roughness.*

The child should point out all objects in the room which feel cold; next, all which do not feel cold; next, all which feel rough or smooth, hard or soft, etc., etc.

105. *Weight.*

When children are walking out they may be told to pick up two stones of the same weight; then two stones, one double the weight of the other; then two stones, one half the weight of the other; then three stones, one to weigh as much as the other two; four stones, one to weigh as much as the other three; three stones, the second double the weight of the first, and the third double the weight of the second.

106. *Feeling.*

Let the children try to puzzle one who is blinded by putting his hand on various objects, and asking what he is touching, whether it is wood, or paper, or metal, or stone, or leather, etc. The children should take it by turns to be blinded.

The children may, in like manner, try to puzzle each other with various coins; also with different sorts of string or thread, as flaxen, woollen, cotton and silk.

107. *Size.*

One child should say the name of some small animal; another child may be required to name a larger animal; another child to name a larger animal still, and so on as far as the children can go. The children may then begin with the largest animal they think of, and descend to the least.

A similar exercise may be performed with objects in the room, in the house, or in the fields, etc.

SECTION III.

108. *Paper-cutting.*

The following objects may be cut out in doubled paper :—

Fig. 54.

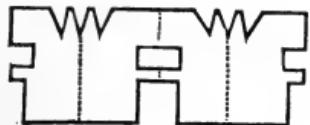


Fig. 55.



Fig. 56.



Fig. 57.



Fig. 58.

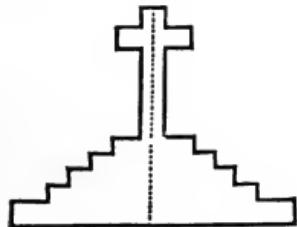


Fig. 59.

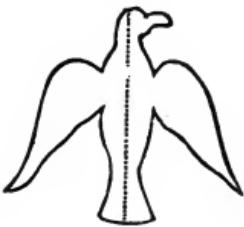
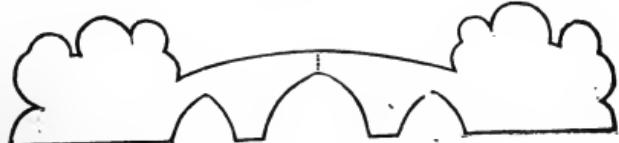


Fig. 60.



109. *Colors.*

The pupils should compare a variety of colored objects, and endeavor to ascertain which of the different colors look most like each other.

110. *Cat's Cradle*

Is a good game for exercising the fingers.

111. *Balancing.*

The pupil may try to balance objects by their ends on the tip of his fingers, as coins, books, pens, sticks.

112. *Smell.*

The pupils may try to puzzle each other with different objects, which are to be guessed at by the smell.

113. *Paper-modelling.*

The pupil may cut figures like the following out of card or stiff paper, and by bending, or folding, and pasting them where the lines indicate, he will have the model of a box, round tower, square tower, and cottage:—

Fig. 61.

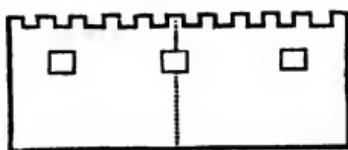


Fig. 62.

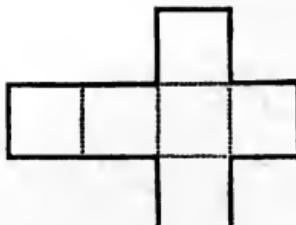


Fig. 63.

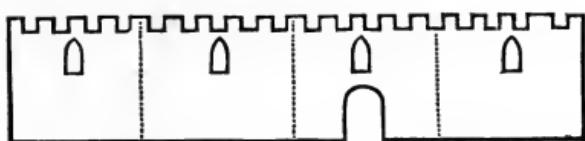
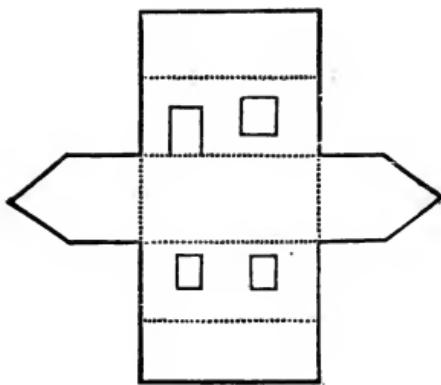


Fig. 64.



114. *Arrangement.*

Let the pupil arrange in a bunch, so as to look well, several twigs of the same tree or shrub, with the leaves on. He may afterwards arrange with as much taste as possible the twigs of several trees and shrubs. A number of heads of grass of different kinds may be very prettily arranged.

115. *Knots.*

The following knots may be attempted :—

Fig. 65.



Fig. 66.



116.

String may be joined by the following knots:—

Fig. 67.



Fig. 68.

117. *Netting*

Is not difficult — it may be easily learned, and will prove amusing to children.

118. *Feeling*.

The children, where there are several, may endeavor to recognize each other by slightly feeling the face.

119. *Hand*.

The children may endeavor to keep one or more of their fingers open while the rest are closed.

120. *Paper-folding.*

Small boxes may be made by folding paper in this manner:—

Fig. 69.

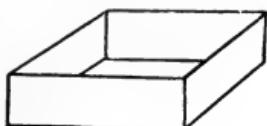
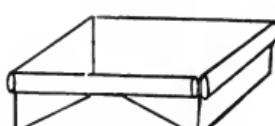


Fig. 70.

121. *Shape.*

The shape of tolerably large objects may be discovered by children, by the touch only, first using both hands, afterwards only one, such as of a book, stool, box, hat, stick, ruler, dish, piece of cloth, paper, leather, etc.

122. *Measuring.*

The child may be asked how many children like himself would block up the doorway, or could stand in a row along the side of the table, or along the wall, etc. The pupil should guess first, and try afterwards.

123. *Platting.*

The pupil may attempt the following kind of plat:—

Fig. 71.



124. Darkness.

The pupil may be blindfolded, or sent into a dark room, to fetch something, the place of which is not told him, but which can be easily found.

125. Straw Mats.

The pupils may try to make straw or grass mats in the manner attempted before with rushes.

126. Rapid Vision.

The pupils may glance for a moment at a room (or passage, or view, or number of objects), and then turn round, or go into another room, and tell what they have seen. They may then take a second glance, and, turning round again, say whether they discovered anything that they had omitted in the first view.

127. Length.

The pupil should feel different small objects, and tell their length without seeing them, and should verify his guess by measuring; after some practice in this exercise the child may attempt larger objects, and tell their length, breadth, etc., in feet.

128. Diameters.

Let the length of the diameter of a circle and oval, as of a cup, saucer, basin, two-cent piece, half-dollar, hat, plate, dish, waiter, lozenge-box, etc., be estimated first, and afterwards measured. And let the dia-

nal of a square, oblong, and diamond-shaped object, as a box, handkerchief, slate, etc., be treated in the same manner.

129. *Touch.*

Let the children have several kinds of grain and seeds, beads, or any small objects, and take it by turns to put the seeds singly into each other's hands, that they may discover the kinds by feeling only.

130. *Feeling.*

Let the child who has learnt his letters, try if he can tell by the feeling only what letter is impressed or written on the palm of his hand with a pencil or pointed stick.

131. *Noises.*

Several children may alternately try to puzzle each other by making a variety of noises, each child taking it in turn to endeavor to find out which of his companions made each sound.

132. *Feeling.*

Let the child feel well the thickness of 100 leaves of a book; then let him feel 200 and be asked how many he thinks he feels; then 400, then 300 and so on.

133. *Platting.*

Boys may plat thongs for whips with the plat at No. 138; the lower part or lash may be platted as at No. 123. The thong should be fastened to the end

of the stick with waxed thread, after the end has been made rough.

134. *Paper-cutting.*

The following figures may be cut out of doubled paper:—

Fig. 72.

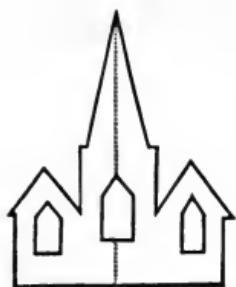


Fig. 73.



Fig. 74.



Fig. 75.



Fig. 76.



Fig. 77.

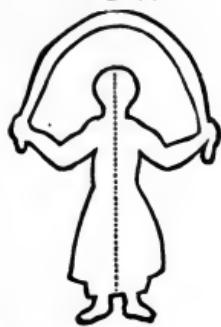
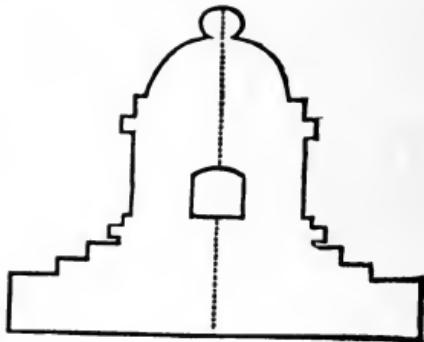


Fig. 78.



Fig. 79.



135. *Darkness.*

The children may be told to do something in a dark room, as to put a stool into various parts of the room, to put a chair at the head of the table, to lay a book on every chair, or on every other chair, to fetch one of three books from a particular spot, etc.

136. *Knots.*

The pupils should try to tie and to join string with the following knots:—

Fig. 80.



Fig. 81.

137. *Sounds.*

Let a bell, or any sonorous object, be struck in different parts of a room, and the child be asked where the sound was made.

138. *Platting.*

A plat may now be learned with three strings or tapes, etc.

139. *Height.*

The height of large objects, such as chairs, tables, desks, walls of a room, shrubs, etc., may be first estimated, and then measured.

140. *Wickerwork.*

Little baskets of wickerwork, commenced so that children may complete them, are sometimes sold, and afford an excellent and amusing exercise.

141. *Building.*

Castles, temples, etc., may be attempted by the pupils with small wooden bricks or books.

142. *Pacing.*

In continuation of Exercise No. 97, the child may be asked how many paces farther off some object is than some other; as, How many paces farther from you is the chair than the table? How much farther is the wall than the chair? How much beyond that stone is that tree? etc.

143. *Paper-modelling.*

The following figures, cut out in card or stiff paper, will fold into a church with a tower, and a chapel.

Fig. 82.

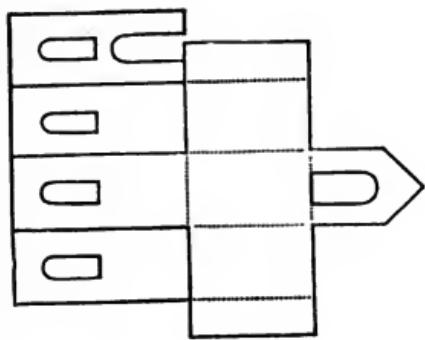
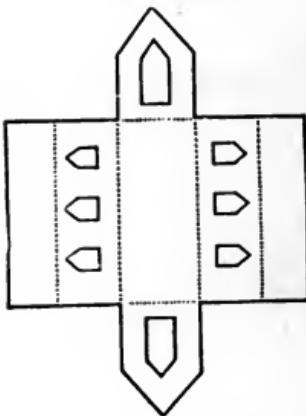


Fig. 83.

144. *Feeling.*

Exercise No. 130 may be continued, and more difficult letters and figures attempted.

145.

Different sorts of paper should be felt by the pupil, and he should discover, if possible, each kind;

also different kinds of woollen cloth, linen cloth, cotton cloth, silk, and leather.

146. *Needles.*

The pupil may try to thread small needles, with silk, and cotton thread.

147. *Feeling.*

A well known coin should be put into the child's hand, who should be required to tell (by feeling only) what coin it is, and which side the head is on.

148. *Arrangement.*

The pupils should arrange in a bunch, with as much taste as possible, a few sprigs of rue, southern-wood, thyme, and sage.

He may next try to arrange, tastily, a few wild flowers in a nosegay, paying attention to the colors which look best together, and to the grouping of the whole.

Next, he may try to arrange well a few garden flowers of one sort only; then he may try two sorts together, and afterwards three sorts.

He may then try to unite a few wild flowers, and a few green shrubs, so as to form an elegant nosegay.

149. *Sounds — Tones.*

A variety of objects should be struck, and the pupils should endeavor to discover which give the highest tones, and which give the lowest tones.

150. *Knitting*

Garters is not difficult, and it is a good exercise for the hand.

151. *Straw-plat.*

Platting straw, and making it up into dolls' bonnets, etc., would be a good exercise for little girls.

152. *Diagonals, etc.*

Let the Exercise No. 128 be performed by feeling only; the pupil estimating the length in inches.

153. *Blindfolding.*

Let the children be blindfolded, and go to different parts of the room, and tell where they are, and what they are touching. After they are somewhat accustomed to this exercise, they may, when blinded, be turned round, or half round, or twice round, before they commence their circuit.

154. *Paper-cutting and Folding.*

A purse and a box may be cut out and folded thus:—

Fig. 84.



Fig. 85.



155. *Sounds.*

Let a sonorous object be struck at different distances from the child, with different degrees of loudness, the child discovering by the ear only how far off the sound is.

156.

One child may repeat some word in different ways, and in various parts of the room, another child guessing where the sound comes from in each instance.

157. *Parcels.*

Pease, sand, or any small objects may be neatly put up into conical-shaped paper parcels, such as grocers use.

158. *Sounds.*

A sonorous body, such as an empty box, should be struck separately with three or four things, as, a stick, a book, the fist, etc.; the child should be told what things the box will be struck with; and should be asked at each blow which of these objects the box was struck with.

159. *Sounds imitated.*

One child should imitate the voices of as many animals as he can, and the other children should guess at the voices, and correct the inaccuracies.

160. *Arrangement.*

Two or three stones (or fossils), shells, and bits of

moss or sea-weed, should be arranged loosely so as to form an elegant group.

161. *Paper-modelling.*

The following objects may be cut out of thick paper or card, and folded into baskets or trays.

Fig. 86.

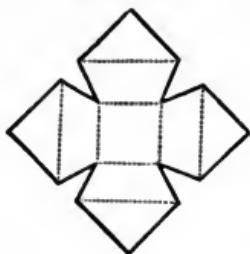


Fig. 87.

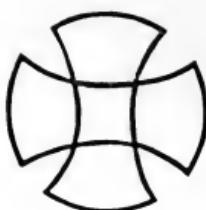


Fig. 88.



162. *Knots, etc.*

The pupils may try to do several of the easier kinds of plaiting, and to tie and untie some of the simpler knots without looking.

163. *Bows.*

The pupils may put a ribbon or string round their waists, and tie it in a bow behind. A knot may be tried first if the bow is too difficult.

164. *Pacing.*

The child may state how many of his paces one object is distant from another, and ascertain the distance by pacing it. These distances should not be great at first.

Children should endeavor to reduce their paces to

feet, that they may know whether they should count a pace as a foot, or as half a foot, or three paces as two feet, etc.

165. *Thickness.*

The child may feel the thickness of twenty leaves of a book, and may then be tried with three times as much, four times as much, and twice as much, to see if he can guess the thickness correctly. When children are well acquainted with Arithmetic, any number of leaves may be taken at random.

166. *Arrangement.*

A large bunch of wild flowers and shrubs may be arranged into a handsome nosegay after a few trials; the pupils may be induced to observe and remember what combinations do not succeed as well as those which do.

A few garden flowers of one sort may be arranged with several sorts of shrubs.

167.

A variety of garden flowers and plants should afterwards be arranged with as much taste as possible.

168.

A few flowers and shrubs should be arranged loosely on a table so as to look well.

169. *Measuring.*

The child should estimate the length of a long

piece of string or tape, by drawing it through the hands (as a mercer measures cloth), but without using any measure.

170. *Paper-cutting.*

The following objects may be cut out of paper:—

Fig. 89.



Fig. 90.



Fig. 91.



Fig. 92.

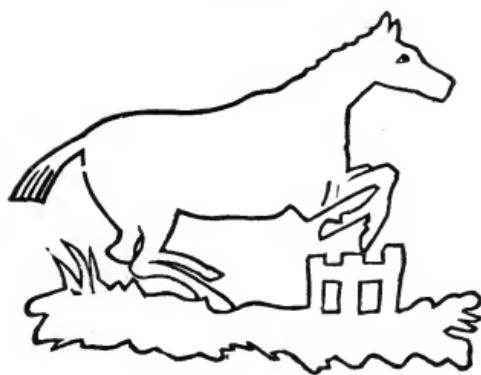




Fig. 93.



Fig. 94.

Fig. 95.

171. *Pricking paper.*

Simple figures as at Nos. 62 and 170, should be pricked out from memory.

PART III.

EXERCISES FOR THE BODY FOR YOUNG CHILDREN.

These Exercises may be performed in a room, or out of doors ; but it is better to perform them in the open air when the weather will permit.

SECTION I.

EXERCISES FOR THE ARMS AND LEGS.

Which may be performed by one or more Children in a confined Space.

The exercises for the hands and arms, and those for the legs and feet, should be performed alternately, that is to say, an exercise for the arms should be followed by one for the legs and feet, that again by one for the arms, and so on, in the order in which they are placed. The object of these changes is to give play alternately to the superior and inferior extremities.

The pupils should stand before the instructor so far apart that their hands, when extended, shall not

touch. If they are numerous they may stand before the teacher in a semi-circle, or in two semi-circles, so that the front row shall not intercept the view of those behind.

The feet should be kept quite straight while this portion of the exercises is practised, the toes being neither turned in nor turned out: the space between the feet should not be greater than an inch, and the body should rest equally on both legs. When the feet are straight and near to each other, the child is forced to keep the body straight, and to balance it well.

When the child is performing the exercises with the legs and feet, the hands should be placed firmly on the haunches, the fingers in front, and the thumb behind, which throws the chest out and the shoulders back, and constrains the body to take an upright and firm posture.

Fig. 96.



At first not more than two or three of these exercises should be gone through at a time; and the

lesson should not be continued after it has ceased to please.

The instructor should perform each exercise before the pupils for their imitation. When this cannot be done, the children may be told what to do, and corrected until they do it right.

The pupils should learn to keep time in their motions; and it may be useful to count "one, two," or "one, two, three," (as in music) during the course of each exercise.

1. The hands should be placed straight down by the sides. The right hand should then be slowly extended sideways to the level of the shoulders, and down again: the left hand should next be extended in the same manner; and these motions may be made alternately eight or ten times. The pupils should count "one, two," during each of these motions, that they may keep time. The feet should be kept straight, and close together.

2. The pupil should raise the right foot perpendicularly; then put it down and raise the left; the motion being repeated several times. "One, two," should be counted by the instructor on the rising and falling of each leg. With practice the child will be able to make these motions very slowly, and to stand some time on each leg. The position of the hand on the haunches, as noticed above, should be particularly attended to in this and all the following exercises for the legs.

3. Exercise No. 1 should be again performed; but both arms should be raised and depressed at the same time.

4. The right foot should be slowly extended out in front, very slightly raised, and then brought back to its place; the same thing should be done with the left foot: these motions may be repeated four or five times.

5. Do as in No. 1, and continue the exercise by raising up the arms perpendicularly; then depress them slowly to the level of the shoulders, and then let them go down to the sides. This may be repeated five or six times. The pupils should keep time by counting one, two, three, four.

6. The feet to be alternately extended sideways four or five times; counting; and with the arms in proper position.

7. One arm should be swung backwards and forwards, the body not being moved, the opposite arm being kept firm, and its hand closed and pressed upon the chest. The swinging arm should be kept rather stiff. This exercise should be repeated with alternate arms six or eight times; and the left arm should always be as much exercised as the right to prevent the body from becoming crooked.

8. The feet to be alternately extended backwards, slowly, the body being thrown forward as little as possible.

9. The hands to be clapped in front and behind, as low down as possible, the body remaining quite

upright and stiff. This may be done ten or twelve times; and time should be kept.

10. Stand on the toes, the body being kept upright, and the hands and arms in the proper position.

11. Swing both arms backward and forward at the same time; counting; and keeping the body perfectly steady.

12. Jump forward, and back again; the feet must be kept close, and the hands and arms in position.

13. Extend the hands horizontally in front to the height of the shoulders, their backs being towards each other, and nearly touching; then throw them back as if they were going to strike each other behind, but keep the arms stiff and straight, which will prevent the hands from reaching each other. Count one, two.

14. The feet should be alternately swung backwards and forwards very slowly, the swinging leg being kept stiff, and the body erect.

15. Clap the hands above the head, and bring them down again flat by the sides; counting and keeping time.

16. Stand on the heels, keeping the arms in position, and the body firm and erect.

17. Close one hand, and place it firmly on the chest; place the other arm straight down, and make a circular motion with it, so that the tips of the fingers shall describe a horizontal circle.

18. Walk two steps forwards, and back again, on the toes.

19. Do as in No. 17, except that the circle described by the tips of the fingers should be perpendicular in front.

20. Stand on one foot, and describe a small circle with the other, immediately under the body.

21. Raise the arms perpendicularly, and describe a circle with the points of the fingers towards the ceiling. The body to be kept perfectly steady.

22. Hop two steps forward and back again, keeping the body quite steady and erect.

23. Let the elbows be bent and thrown back, the fingers being shut, and the nails upwards; then throw out the arms in front as far as they will go, the back of the closed hand being upwards. Repeat this slowly nine or ten times.

24. Stand on one foot, and describe a small circle with the other in front of the body. The same should afterwards be done with the other foot.

25. Let the arm be folded up within, so that the hand may approach the armpit; then let the hand be thrown forcibly down, the fingers being closed. The body should be kept quite firm and erect.

26. Let the pupil stand on one foot, and describe a circle with the other behind.

27. First, let the closed hands be held down straight; second, let the closed hands touch the shoulders in front, the elbows being kept straight down; third, let the arms be thrown up perpendicular.

cularly as high as possible : the arms should then go back to the second and first positions. This exercise should be performed slowly, the time counted, and the body should be kept steady throughout.

28. Let the pupil try to stand first on the right toes ; then on the left.

29. Let the pupils stretch out the arms horizontally to the height of the shoulders, the hands being closed ; then let the closed hands be brought back, so as to touch the shoulders in front, the arm, from the shoulder to the elbow, being kept out steadily all the time.

30. Let the pupil walk forwards two steps, and back again, on the heels.

31. The same exercise as No. 29, except that when one arm is in the first position the other arm should be in the second position, changing alternately.

32. Let the pupil stand on one foot, and with the other describe a large circle in front and behind.

33. Let the arms alternately be made to encircle the top of the head, and touch the opposite ear.

34. Let the pupil stand on one foot, and with the other describe three small circles, one in front, one perpendicularly, and the third behind.

35. Let the pupil's arms be slightly curved and slowly raised in front, carried over the head, and extended gradually backwards and downwards until they reach their first position. The hands should not be closed ; the body should be kept erect. These

motions may be repeated several times, and it is essential that they should be repeated very slowly.

36. The pupil, standing firmly on one leg, should throw out the other forcibly in front, as if kicking, but without altering the position of the body. The exercise may be varied by throwing out the leg forcibly behind and also sideways.

37. Let two or more pupils join their hands, and raise them up slowly as high as they can, without altering the position of the body; the hands should then be depressed; then thrust forward slowly, and put down again; and then thrust slowly backward and down again. The time should be counted, and the body kept upright and steady.

38. Let the pupils try to stand upon one heel.

SECTION II.

The Exercises in this Section may alternate with those in Sections I. and III., as may be found convenient.

EXERCISES FOR THE LEGS AND FEET.

In walking and running the hands should be placed on the haunches, the fingers in front, and thumbs behind, until the pupil can perform the exercises correctly ; the pupil may then adopt this position of the arms every second exercise or lesson only.

Walking.

39. The pupils, in a single row or line, should first walk forwards, at an ordinary pace, keeping the step.
40. Secondly ; they should walk or march very slowly.
41. Thirdly ; they should walk quickly.
42. The pupils should then turn half round, and march in single file (or one after the other), keeping the step ; first at their ordinary pace ;
43. Second, slowly ;
44. Third, quickly.

45. The pupils should walk forwards in a double row or line, first at their ordinary pace;
46. Second, slowly;
47. Third, quickly.
48. They should then turn half round in double file, and walk, first at the ordinary pace;
49. Second, slowly;
50. Third, quickly.
51. The pupils, in single line, should walk sideways, from right to left, and from left to right.
52. The same exercise in single file.
53. The pupils, in single line, should walk backwards.
54. The same exercise, the pupils being in single file.
55. The pupils may walk in a square, or in a circle, or triangle, when in single file.
56. The pupils may walk on the toes, in single line, forwards and backwards, keeping the step.
57. The pupils should walk in the same manner on the heels.

Running may be performed in—

58. Single row or line;
59. Double row or line;
60. Single file;
61. Double file.

At first the pupils need not be required to keep the step; afterwards they should. For a change, the pupils may occasionally hold hands when practicable.

62. Single file, in a circle, square, or other figure.

63. Contested running in speed; two or more pupils being matched against each other. A swifter pupil may be matched against others, by having a quarter, a third, or a half more distance to run.

64. Contested running in duration.

Hopping.

65. The pupils may at first hop singly, without regarding time or position.

66. Hopping, without moving from place, on the right and left leg alternately, and keeping time, when possible.

67. In rank or line, keeping the step.

68. In single file, keeping the step.

69. Contest in speed, on right and left leg alternately.

70. Contest in duration.

71. Contest in length of hop.

Jumping.

Jumping may be practised—

72. In place, the pupils keeping time in a series of low jumps, without moving from their place.

73. In line, from one position to another, by a series of short jumps; the feet should be kept close together, and time should be observed.

74. Backwards, in the same manner.

75. Sideways, in the same manner, to right and left.
76. In file.
77. In length, without a run.
78. In length, with a run.
79. Over an obstacle, without a run.
80. Over an obstacle, with a run.

SECTION III.

MISCELLANEOUS EXERCISES, AND EXERCISES FOR THE ARMS AND HANDS.

Pulling.

Pulling with one hand —

81. Two or more pupils may pull against each other with a circular rope formed of bell rope, or some soft substance that will not chafe the hands.

82. With a towel, or soft, straight rope.
83. With a stick or ruler.
84. With the hand alone.

Several pupils may be engaged on each side in these exercises, and the left hand should be used alternately with the right.

Pulling with both hands —

85. With a circular rope, as in No. 81.
86. With a towel or straight rope, as in No. 82.
87. With a stick or ruler.
88. With the hand alone.
89. A stronger pupil may pull against two others; or two may pull against three, etc.

Pushing.

90. One pupil may push against another with one hand.
91. The same exercise, with both hands.
92. The same exercise, with both hands and a stick.
93. Two pupils may push against each other, the hands being placed on the opponent's shoulders.
94. Two pupils may push against each other, or three against two, in several of the above modes.

Balancing.

95. The pupil may balance various objects by the middle, beginning with small ones, as a pen, tea-spoon, pencil, clasped knife, etc.
96. He may then proceed to large ones, as a stick, cane, umbrella, etc.
97. He may balance objects on one end or point, as a stick, hearth-broom, book, etc.
98. And by the centre, as a half-dollar, two-cent piece, book, saucer, plate, and slate.

Ball.

99. Two children may toss the ball from one to the other, the distance being increased as they become more expert in catching.

100. Several children may stand in a circle, and toss the ball round from one to the other; the child who misses is put in the middle, and does not enter

the ring until relieved by another defaulter. The children should stand farther apart as they become more expert. When the children are of different ages, the spaces between the youngest should be the least.

101. Throwing the ball up into the air and catching it in its descent.

102. The ball should be made to rebound from the floor, and then struck down with the palm of the hand, so that it may rebound again, when the process should be repeated, and continued as long as possible.

103. The same as No. 102, except that two or more children strike the ball alternately.

104. The same as No. 101, except that one child throws the ball up, and another catches it.

LIST OF GAMES, ETC.,
FOR
YOUNG CHILDREN.

Ball, Fives.	Card-houses, etc.
— Trap.	—, modelling in.
— Foot.	Carpentering.
Battledore and Shuttlecock.	Carrying weights.
Blindman's-buff.	Cross-crowns.
Boats.	Dominoes.
Bow and Arrow.	Draughts.
Birds, Beasts, and Fishes.	Dolls.
Bricks, Wooden.	Dolls'-houses.
Balancing.	Foot-ball.
Bowls.	Forfeits.
Bulls' Warning.	Fox and Goose.
Cat after Mouse.	Game of Goose.
Cat's-cradle.	Gardening.
Cross-bow.	
Cup and balls.	Hopping.
Cards.	Hide and Seek.

Hockey.	Oranges and lemons.
Hunt the slipper.	
Hop-scotch.	Paper-cutting.
Hop, skip, and jump.	— folding.
Hoops.	— modelling.
Hunt the Hare (or Fox.)	
How do you like it?	Patience.
where do you like it?	Platting.
when do you like it?	Puss in the Corner.
	Pea-shooter.
Jack Straws.	Pop-gun of elder.
Jeu de Siam.	— of quill.
Jumping.	Prison-case.
	Prussian exercise.
Kites.	
Knitting.	Questions and Com-
Knotting.	mands.
Leap-frog.	Races.
Little Blind-man.	Riddles.
Marbles.	Rocks of Scilly.
Magic Music.	Rounders.
Magic Lantern.	
	Swinging.
	Skipping.
Nine-pins, Dutch-pins, Skittles, etc.	Sailing-boats.
Nine-holes.	Show-box.
Netting.	Solitary.
	Soap-bubbles.

Ships, making and rig- ging.	Touch Wood (or Iron).
Spillikens.	Throwing Stones.
Stilts.	———— Darts.
See-saw.	Thread-my-Needle.
Sucker.	Tetotum.
	Whips.
Tops, whipping.	Whistle.
—, peg.	Whiz-gig.
—, humming.	Wooden-bricks.
Trap-ball.	

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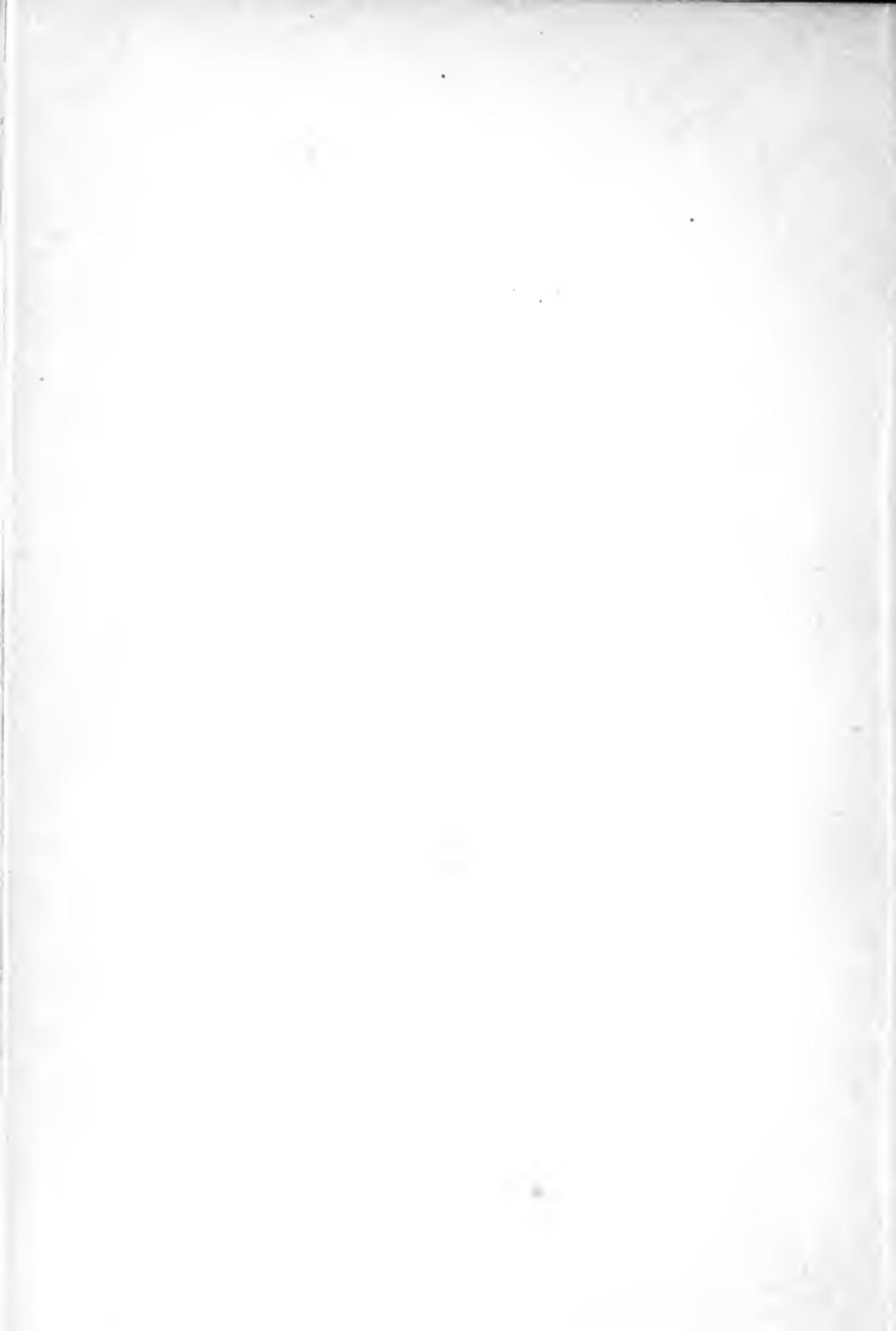
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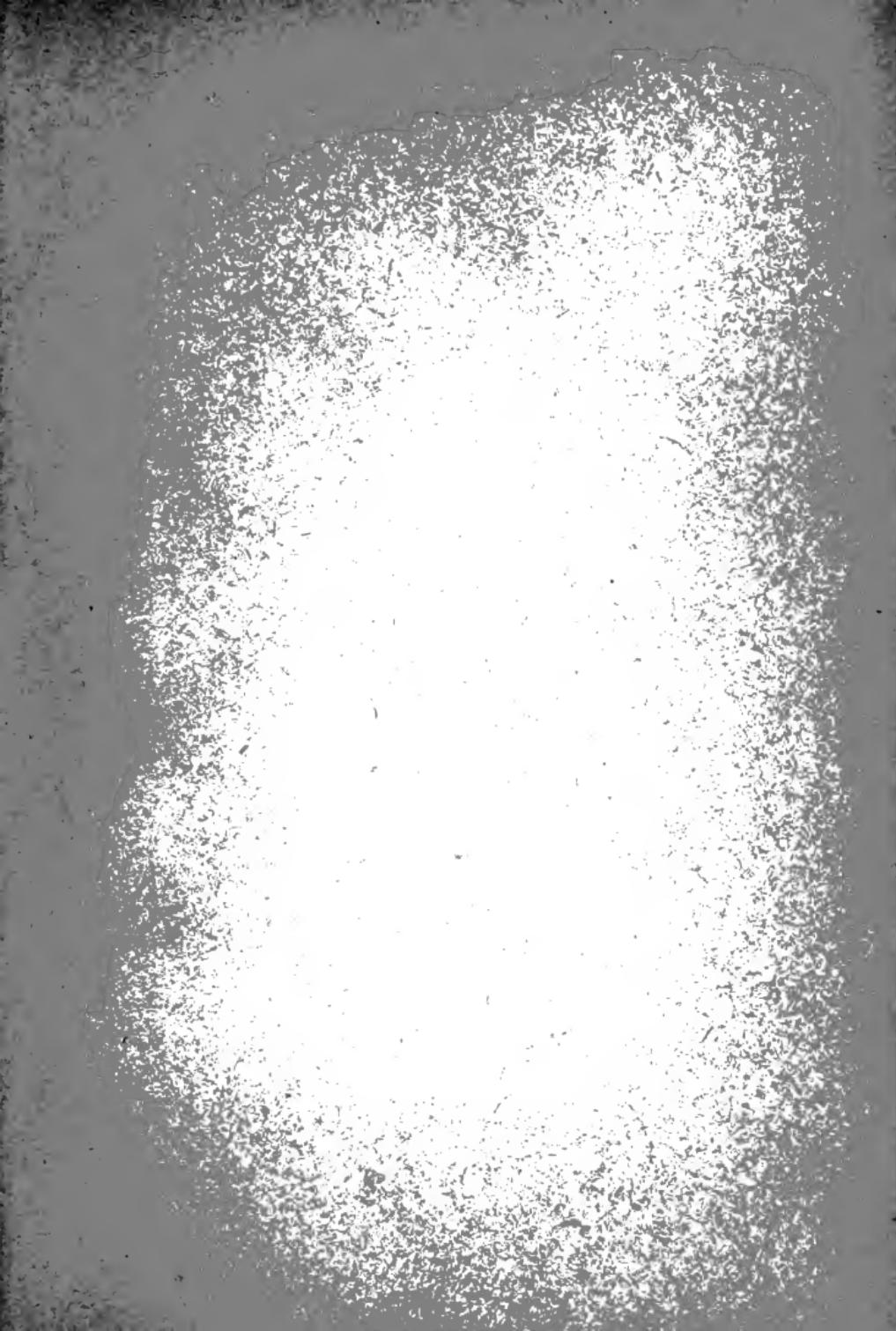
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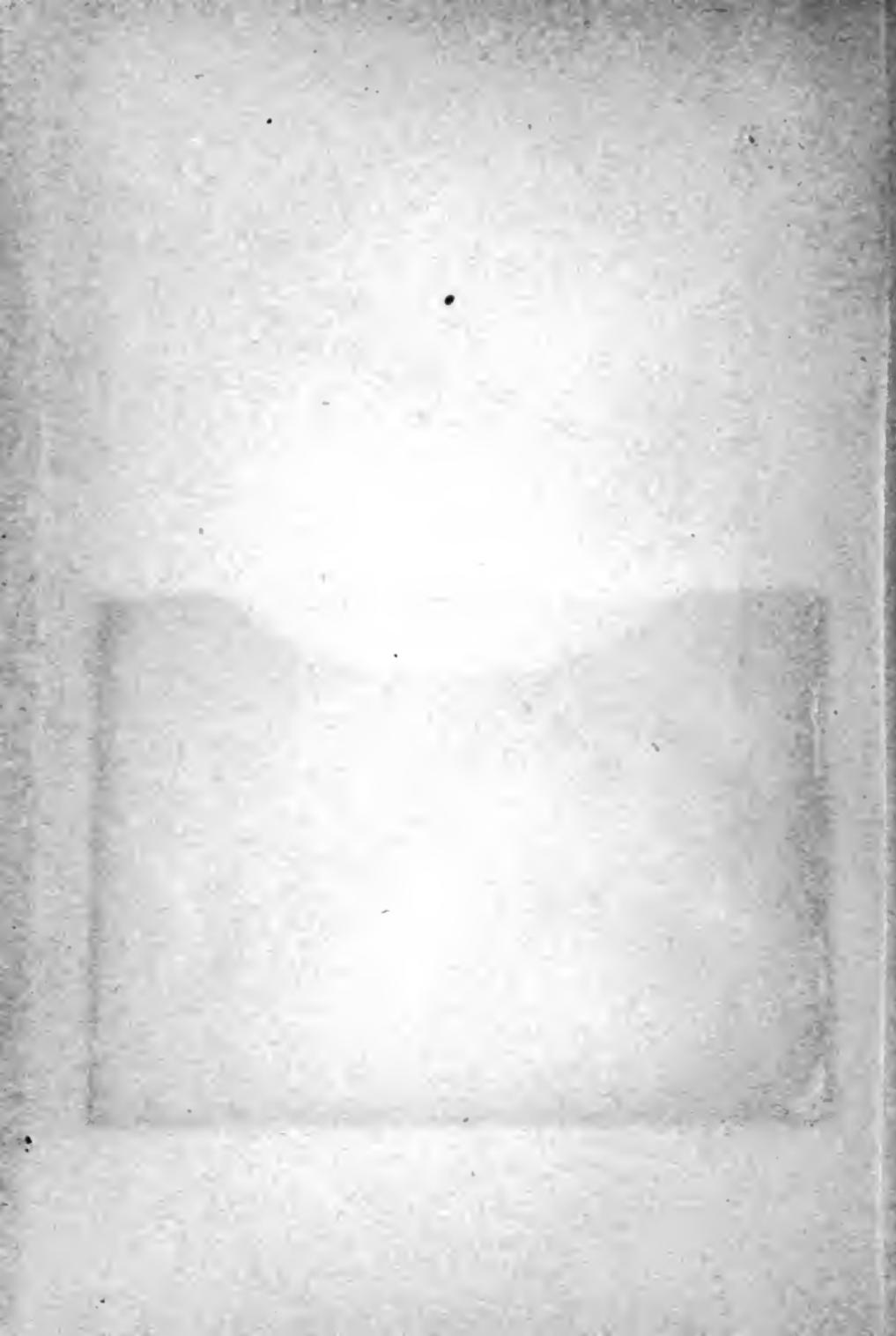
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